



Digitized by the Internet Archive
in 2016

<https://archive.org/details/greenscene2016edby>

GREEN SCENE

THE MAGAZINE OF THE PENNSYLVANIA HORTICULTURAL SOCIETY • SEPT./OCT. 1991 • \$2.00



*Dehydrating
Vegetables and
Fruits from Your
Kitchen*

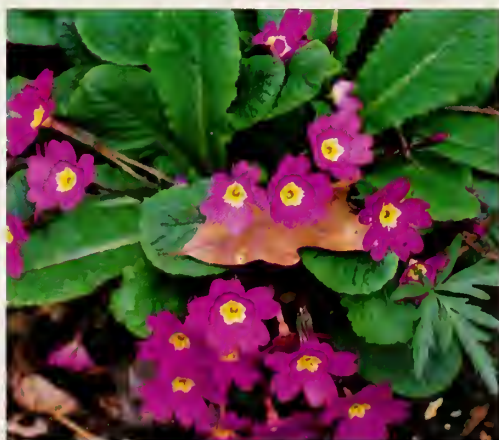
See page 20



10



24



28

Front Cover: photo by John P. Swan
Back Cover: photo by Toni Brinton



in this issue

3. Meditate and Choose, Amnesty and a Mini-survey for Readers

Jean Byrne

4. An Annual Dividend Declared: A Plant

Anne S. Cunningham

9. Plant the Yellow Lady's Slipper in Fall

Tim Morehouse

Harvest Show •

10. The Tomato Bounty •

Dorothy Noble

13. Design Class: A Mass Arrangement of All Fresh Plant Material

James Hayden

14. Squash Bounty By the Basket

Elise Payne

16. Floral Bounty •

Patricia Phillippi

18. A Country Vegetable Garden

Sue Armstrong

20. Dehydrating Vegetables and Fruits from Your Kitchen

Joan Brinton Johnson

24. Let the Machines Roll

Walter Chandoha

28. Gardening in the Shade

Toni Brinton

32. Growing Interest

33. Letters to the Editor

33. Invitation to Plant Societies

34. Classified Advertising

Volume 20, Number 1 September/October 1991

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Monday through Friday 9:30am to 12 Noon (Hotline is closed in December)

Donald L. Felley / Chair

Jane G. Pepper / President

Jean Byrne / Editor

Joseph P. Robinson / Editorial Assistant

Carol C. Lukens / Editorial Assistant

PUBLICATIONS COMMITTEE:

Judy Foley / Chair

Anne S. Cunningham / Vice-Chair

Kathryn S. Andersen

Walter G. Chandoha

Charles W. Heuser

Gene Jackson

Anthony A. Lyle

Robert McCracken Peck

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendells' Graphic

Membership Information: Linda Davis, 625-8265

Printer: Howard Printing

The GREEN SCENE, (USPS 955580), Volume 20, No. 1, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$9.75—Single Copy: \$2.00. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1991

Green Scene subscriptions are part of the membership benefits for:

Blithewold Gardens and Arboretum, Bristol, Rhode Island

Botanical Gardens at Asheville, North Carolina

Cox Arboretum, Dayton, Ohio

Frelinghuysen Arboretum, Morristown, New Jersey

Hershey Gardens of Hershey, Pennsylvania

Maryland Horticultural Society, Baltimore, Maryland

Pennsylvania Horticultural Society, Philadelphia, Pennsylvania

Phipps Friends, Pittsburgh, Pennsylvania

Staten Island Botanical Garden, Inc., New York



illustration by Julie Baxendell

Meditate and Choose, Amnesty and a Mini-survey for Readers

 by Jean Byrne

I've never been to a hockey game, but I'm told that perfectly civilized people run amok during the games. I've been to plant giveaways both at the Pennsylvania Horticultural Society and elsewhere, and in the old days let's just say the energy level was high. Not at hockey game level, but close.

Not so anymore; propriety and sagacity reign. At recent Members' Plant Dividends at the Pennsylvania Horticultural Society people have chosen meditatively. Frankly, I miss watching the thrill of the hunt, the capture of the prize. It's one index to the level of interest and passion. Reflectiveness, however, is an equally good measure, and in just a few days, members of the Pennsylvania Horticultural Society will be able to choose a dividend plant again. Quietly and with forethought. Anne Cunningham roamed the field talking to donors and recipients of past dividend days and tells in words and photographs some of the benefits of this event. See pages 5-8, which include a list of plants and donors.

On the same day, at the same place, the Annual Book Sale will also take place; wonderful old treasured books and some neat new ones will be available. See the box on page 8 for more information. PHS librarian Janet Evans asked me to remind delinquent borrowing members that Book Sale day is Amnesty Day. Bring your overdue books back and no one will blink an eye or ask for loose change. All is forgiven.

* * *

You may have noticed on the masthead that this issue begins Volume 20 of *Green Scene*. We celebrated by accepting new Publications Committee member Gene Jackson's suggestion that it might be time to run a readership survey. Gene, who prepared many surveys for the nursing and education publications for Springhouse

Corporation, which he co-founded, developed one for *Green Scene*. We sent it to 400 randomly selected members and subscribers asking what they liked and didn't like about the May issue of *Green Scene*.

Book Sale day is Amnesty Day. Bring your overdue books back and no one will blink an eye or ask for loose change. All is forgiven.

The responses were enlightening; we found one person's meat is another person's poison. There were two stories in particular that each had both strong adherents and strong opponents. The two most fully read and best rated stories were "Wildflower Fairies Invade PennDOT's Median Strips" and "Living with Lyme Disease."

We got an empathetic kick out of one person's reply to the question: "What are your greatest gardening problems?"

"My physical (human) equipment. I'm getting stiff." There were 56 different answers to that question, and they certainly gave us ideas for future issues: gardening in the shade, weeds, designing a garden, heat and humidity, water clarity, propagating perennials, soil, viruses on lilies, slugs, deer and rabbits, perennials, soil, time and money.

Here's a mini-questionnaire for all our readers who did not have an opportunity to participate in the survey:

- What are your greatest gardening problems?
- Any story suggestions for our editor?

We'd love to hear your answers to these questions and would appreciate it if you'd drop us a postcard or a letter. Your ideas and suggestions are important to us.

•



AN ANNUAL DIVIDEND DECLARED: A PLANT

 by Anne S. Cunningham

The creme de la creme of plants, some not even available at nurseries, are a membership dividend once a year at the Pennsylvania Horticultural Society.

Propagated by skilled gardeners and horticulturists, these plants keep alive a network of rare, unusual and just well-loved plants throughout the area.

ATTEND TWO EVENTS ON THE SAME DAY

1991 PLANT DIVIDEND

Chair: Dot Plyler
Vice-Chairs: Richard L. Bitner
Phyllis Weisman

Open to Pennsylvania Horticultural Society members only.

1991 ANNUAL BOOK SALE

Open to PHS members and general public.

WHEN

Friday, September 6
12 noon to 7 pm

Saturday, September 7
9:30 am to 12 noon

WHERE

Pennsylvania Horticultural Society
325 Walnut Street
Philadelphia, Pa. 19106-2777
Phone: 215-625-8250

Ernesta D. Ballard handed Phyllis Williams a coffee can with a small shrub in it. "Take it," she said, "it's rare."

Ernesta's gesture, made in the early 1950s, constituted the forerunner to the Pennsylvania Horticultural Society's Plant Exchange, now called Plant Dividend.

Today the elegant *Parrotia persica* pleases Williams with its graceful form, interesting winter bark and tiny purple flowers in May.

In 1964 Ernesta Ballard, who was then the Society's executive director (she later became president until she stepped down in 1980), wanted a program that would stimulate members' interest in a wider variety of plants. A plant exchange among members was the ticket. Dot Plyler, who is the chair of this year's Plant Dividend, was among the 50 people who showed up that first spring.

"We probably contributed tomato plants," Plyler remembers with amusement. "The program has become a lot more sophisticated since those early days. The Society has tried several different formats, including a Plant Giveaway at the fall Harvest Show at Memorial Hall in the 1970s, but that became pretty hectic, so they separated the two events."

After 26 years, many of the plants from the Exchange/Giveaway/Dividend flourish in gardens all over the Delaware Valley. Betsy Gullan, who manages members' tours, reports that garden hosts enjoy pointing out a treasured offspring of past Plant

Dividends.

At the opening, people study the lists of available plants as they wait and speculations are lively. Ostensibly no one knows who contributes specific plants, but covetous hearts know a special begonia or rock garden plant or orchid on the list probably comes from the peerless collection of a top winner at the Philadelphia Flower Show. They know, and they're plotting their moves toward the prize as the doors open.

The ground rules: single members receive one plant; other membership categories, three. Plant donors receive an extra plant for every 15 they contribute. The only exception is one orchid per person.

Unusual houseplants, perennials, cacti and succulents, ornamental grasses, flowering shrubs and even trees appear on the list of dividend plants. (See list on page 7). Last year, five 6-foot-high specimen dawn redwoods (*Metasequoia glyptostroboides*) were contributed, and while the organizers wondered how anyone would transport the huge trees home, six appreciative members made short work of the supply. They were gone almost immediately. Some Gold Medal Award plants (formerly the PHS Styer Award) will be available again this year.

Experts stand by to answer questions, and a notebook listing the cultural characteristics and requirements of all the donated plants is available. When the Dividend is over the notebook moves to the Society's HOTLINE desk (215-923-8043; 9 a.m. to noon, Monday through Friday).

continued

Phyllis Williams stands beneath the *Parrotia persica* that Ernesta Ballard gave her in the early 1950s in a coffee can. The gift was a forerunner to the Pennsylvania Horticultural Society's present Plant Dividend



Top: John Leonard contributes a number of orchids from his extensive collection to the Pennsylvania Horticultural Society's Plant Dividend. He's shown here with *Paphiopedilum urbanianum*, one of the popular orchids at the Plant Dividend. Bottom: Plant Dividend veteran Sally Reath inspects cuttings of *Hedera helix* 'Buttercup,' a 1988 Gold Medal winner (formerly the PHS Styer Award). This hardy ivy achieves a bright golden yellow color in the sun, and looks magnificent climbing on a gray rock.



Sylvia Lin and her grandson Karl make the rounds of her begonia collection, grooming and selecting plants to propagate for the Plant Dividend. Lin is a seven-time winner of the Horticultural Sweepstakes at The Philadelphia Flower Show.

1991 PLANT DIVIDENDS*

PERENNIALS:

- Alstroemeria psittacina*, a red parrot lily hardy in our area;
Astilbe spp., excellent, dependable plants for shade;
Baptisia australis, undemanding — blue flowers — member of pea family;
Belamcanda chinensis, old-fashioned blackberry lily — nice;
Campanula carpatica 'Bluc Chips,' good edging or wall plant;
Chrysogonum virginianum, low and long blooming;
Corydalis cheilanthifolia, ferny leaf — yellow flower;
Geranium dalmaticum, small pink hardy geranium for rock garden or front of border;
Hedytis caerulea, dainty Quaker ladies of early spring;
Hemerocallis hybrids, also *H.* 'Hyperion' and *H.* 'Stella d'Oro,' indispensable for the sunny border;
Heuchera americana 'Garnet,' new introduction of special selection of this fine native plant;
Hieracium waldsteinii, for hot, dry sunny spot;
Hosta spp., essential for a shady garden;
Iris graminea, small fragrant blue iris;
Iris setosa 'Nana,' only 10 inches high, compact, rock garden possibility;
Lilium 'Jane Pepper' (see photo on page 8)
Ophiopogon planiscapus 'Nigrescens,' dark, grass-like foliage makes fine contrast with green background;
Orostachys furusei, good rock garden plant;
Phlox douglasii 'Daniel's Cushion,' one of the best spring phloxes — looks good all year;
Polygonatum humile, interesting tiny solomon's seal from the Orient;
Potentilla tridentata 'Minima,' handsome, compact white-flowered groundcover;
Salvia penstemooides, a very rare Texas endemic — red flower;
Spigelia marilandica, good June-blooming red/yellow-flowered border plant;
Trillium grandiflorum, excess from donors' gardens (not wild collected!)
Viola pedata, lovely, dainty, non-invasive violet.

FERNS:

- Arachniodes standishii*, handsome Asian upside-down fern;
Athyrium goeringianum 'Pictum,' colorful Japanese painted fern;

continued



Morris Berd takes dozens of cuttings from his fragrant *Viburnum x Juddii* for the PHS Plant Dividend. Berd also contributes azaleas from his propagating bed.

Polystichum braunii, Braun's holly fern is native to more northern regions of our country but will succeed in our area.

HOUSEPLANTS:

Aeschynanthus pulcher, good winter-flowering plant;

Begonias of several varieties;

Echeveria runyonii x affinis, long-blooming red-flowered succulent;

Orchids of several genera for greenhouse and windowsill;

Oxalis oregana, popular "clover leaf" type houseplant;

Strelitzia reginae, a bird of paradise in your living room? Wow!

SHRUBS:

Camellia japonica, pink blooms on this borderline hardy camellia;

Caryopteris sp., unique for blue color in August shrub;

Cornus sericea 'Silver and Gold,' variegated leaves quite striking on this recent introduction from a local garden;

Deutzia gracilis 'Nikko,' low-growing white-flowered;

Euonymus japonica 'Microphylla,' miniature edging shrub;

Euonymus kiautschovic 'Manhattan,' informal hedge shrub to 6 feet;

Ilex x meserveae 'Mesgol,' only yellow-berried blue holly available today;

Itea virginica 'Henry's Garnet,' known for fall color, spreading habit;

Rhododendron satsuki hybrid, Gumpo azalea — compact plant with large flowers;

Rosa 'Meiflopan,' a white Meidiland — long blooming and disease resistant;

Salix gracilistyla, early pussy willow.

TREES:

Cornus kousa, an oriental dogwood, less vulnerable to current problems than our native *C. florida*

Ilex 'Doctor Kassab,' to 35 feet. Use as specimen tree.

VINES:

Clematis orientalis 'Bill McKenzie,' orange-colored sepals on this unusual clematis;

Clematis tangutica, and yellow sepals on this one;

Hedera helix 'Buttercup,' striking green and gold leaves.

PROPAGATOR DONORS*

Thanks to these propagators who generously share time, talents and plants:

Kathryn Andersen, Richard L. Bitner, Richard Both, Michael Bowell, Conard Pyle, Lester Cundiff, Aldys C. Davis, Alice Doering, Elizabeth Farley, Walter Fisher, Joyce Fingerut, Roxie Gevjan, Janet and John Gyer, George Harding, Tam Hartell, Betty Kassab, Anita Kistler, David Lutt, Jane Lennon, John Leonard, Richard W. Lighty, Sylvia Lin, Cheryl and Thomas Monroe, Robert W. Montgomery Landscape Nursery, Dee Peck, Dot Plyler, Sally Reath, Helen Roback, Herbert Schiffer, Charlotte and Alan Slack, Irene Slater, Art Tucker, Rosemarie Vassalluzzo, Robert Way, Phyllis Weisman, Susie Wilmerding, Mary Lou Wolfe, Chris Woods, Sally Yow.

* as of press time

photo by Kathryn S. Andersen



Lilium 'Jane Pepper,' a pale yellow upfacing Asiatic lily with maroon brush marks on the petals was hybridized and introduced by Kathryn S. Andersen of Wilmington, Delaware. A limited number will be available at the Plant Dividend this year.

ANNUAL BOOK SALE

The Pennsylvania Horticultural Society Library's Annual Book Sale is held at the same time as the Plant Dividend.

If you're looking for an old *Hortus*, *Exotica*, or maybe an 18th or 19th century gardening book, some specialty plant book that might be rare or out of print, or even some lovely matted or unmatted botanical prints, you might get lucky. All these and more have been on sale in past years. The PHS Library staff culls duplicates from their shelves, and generous PHS members offer full collections or a few books for the sale to benefit the Library.

For the first time this year, new gardening books will also be on sale (and at a discount, too).

The sale is open to members and to the general public.

Anne S. Cunningham is a frequent contributor to *Green Scene* and *The Philadelphia Inquirer*.

PLANT THE YELLOW LADY'S SLIPPER IN FALL

A rare orchid: a spring beauty for the wild garden

 by Tim Morehouse

Available from some nurseries that propagate rather than collect this special plant.

Some of today's busy gardeners, able to squeeze into their hectic schedules only a "fair weather" moment or two on weekends, have begun to consider cultivating native wildflowers, suitable for a shady corner that will "take care of themselves." Minimal attention is the key. Among the traditional spring bulbs, why not plant a clutch of the exotic — yet easy to grow — yellow lady's slipper orchid?

A common reaction to orchids (especially from the novice) is that they are too demanding and fussy. Concerning our native yellow lady's slipper, nothing could be further from the truth.

Cypripedium, the botanical name for this plant, was devised by Linnaeus over 200 years ago: *Cypripedium*, from the Greek *Kypris* meaning "Venus" and *podion*, meaning "slipper" or "little foot." Pilgrims in America found it growing in forests inhabited by Indians, hence the name "moccasin flower."

Our three native varieties, the pink lady's slipper (*Cypripedium acaule*), the showy lady's slipper (*Cypripedium reginae*), and the yellow lady's slipper (*Cypripedium calceolus*) are scattered in the wild, ranging from Nova Scotia, Ontario, Maine, Pennsylvania, Ohio, Nebraska, Colorado, south to Georgia and Alabama, ascending to altitudes of 4,000 feet in Virginia. They all thrive in rich woodland soil and shaded hillsides. The pink moccasin flower and showy lady slipper prefer wet woods and bogs but will, occasionally, be found flourishing in drier areas.

I grow only the yellow lady's slipper for several reasons: it can be found in some nursery catalogs where the owners propagate their own (see listing); it prefers good drainage and high, open shade; it will increase each year in ideal locations (my own plants produce two or three new blooms each spring). The pink varieties should never, never, be removed from their wild habitats. Acquisitive gardeners beware: *Cypripedium acaule* or moccasin flower will thrive *only* in soil containing the *mycorrhizal* fungi, commonly found in



Cypripedium calceolus

conifer and hardwood (particularly oak) forests. The thread-like mycelia of the fungi live within the roots of many trees. A symbiotic relationship occurs whereby the pink lady's slipper gets a mineral and nutrient "injection" from the mycelia and the fungi gets sugar and carbohydrates from the orchid. A good deal for both plants.

plant in fall

So I grow the yellow variety on a shady slope in my woodland garden. I always add generous quantities of peat, old oak leaves, and pine needles. Fall is the best time for planting: simply place the tip of the rhizome about one inch below the surface of the soil, barely covering the crown. Spring sunshine, filtering through the branches, creates ideal light at blooming time, usually early May in Ohio. Surround your clump with native ferns such as the christmas fern, the lady fern, or maidenhair and, if you want, some violets or *tiny* spring flowering bulbs. These are perfect accompaniments with the yellow orchid.

At a symposium held in 1988 at the Brandywine Conservancy Museum in Chadds Ford, Pa., dealing with the propagation of native wild orchids, the consensus of the majority present was that no one was growing *cypripediums* from seed. According to Mario DiGregorio, author of *Vanishing Heritage* (Mountain Press Publishing Co., 1989), it takes 10 to 15 years to produce a flowering plant from the tiny, spore-like seed.

While closely observing my yellow lady's slipper in bloom, I have watched a bee crawl into the pouch-like sac in search of pollen. He had to use some force against the elastic sloping sides to find the pollen on the fine white hairs in the upper part. After his "banquet," he buzzed about in-

side, trying to find his way out of the trap. As he crawled toward the aperture he rubbed his body along the sticky, overhanging stigma, which I assume combed out the pollen he brought on his back from another flower. As he struggled through the tiny opening, he plastered his back with yellow granular pollen as a parting gift, then away he flew to another bloom where he repeated the process. After studying the bee's activity in the yellow lady's slipper, I am certain few plants have taken such elaborate precautions against self-pollination.

But I don't suggest spring days of careful "bee watching," rather, I suggest planting the lovely yellow slipper to enhance your collection of native wildflowers. Its beauty (and ease of culture) is simply "its own excuse for being."

SOURCES

Griffey's Nursery
1670 Highway 25-70
Marshall, NC 28753
(Excellent plants — good prices)
Catalog: Free

The New England Wildflower Society
Hemenway Road
Framingham, MA 01701
Seed catalog, \$1.00 plus #10 SASE
(75¢ postage). Catalog shipped
January. Orders filled Jan.-March
15 only.

Orchid Gardens
2232 139th Ave., N.W.
Andover, MN 55304
Catalog: 50 cents

Tim Morehouse is a frequent *Green Scene* contributors who gardens in Cincinnati, Ohio.



THE TOMATO BOUNTY

 by Dorothy Noble

“Why would anyone grow 28 varieties of tomatoes?” asked a tall man behind me, as the passing crowd admired the abundance of vegetables in the Bounty by the Basket arrangements at last year’s Harvest Show.

The answer is surprisingly simple. Tomato culture is relatively easy. The real challenge is locating, selecting, and experimenting with varieties, particularly the unusual ones.

‘Bounty’ aptly characterizes *Lycopersicon* spp. Generous with their number of cultivars, these members of the *Solanaceae* family abound with shapes, sizes, and colors. The Tomato Bounty by the Basket from the 1990 Harvest Show illustrates a mix of modern hybrids and old-fashioned heirlooms sporting uncommon colors of white and green, blended with reds, pinks, oranges, yellows, and even a bicolor. Tomatoes range from pea-size to beefsteaks of well over a pound, with pear, plum, globular, oblate, ruffled, and lobed shapes, and others in between.

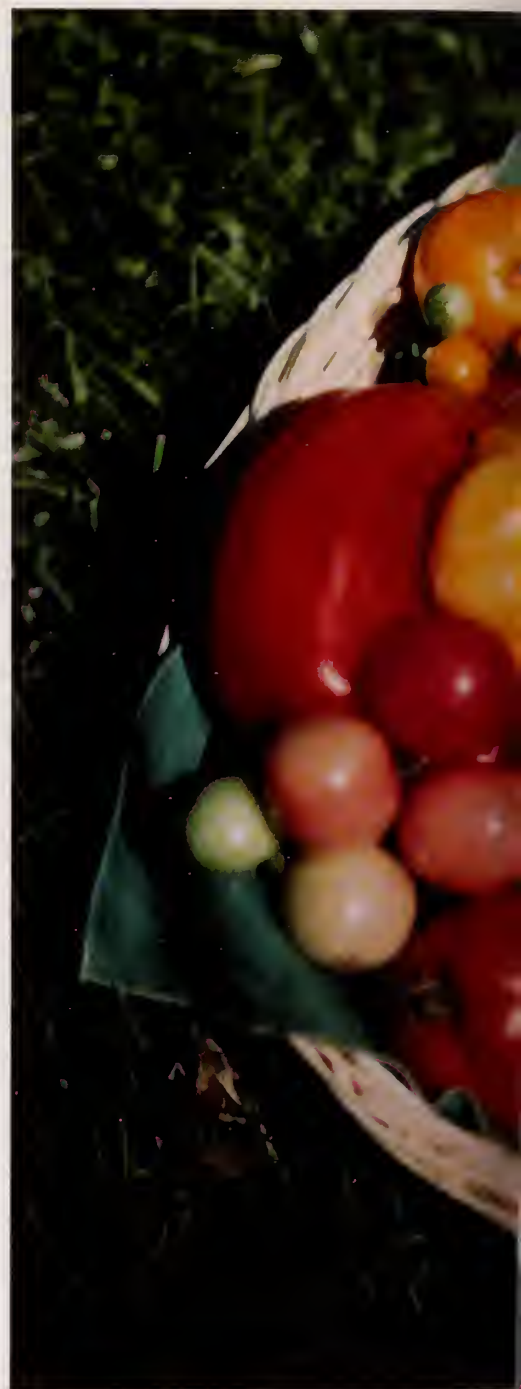
Growing that assortment, however, was not without surprises. Seed catalogs, eagerly accumulated and zealously studied by avid growers, sometimes give little information about the lesser-known varieties. For example, because its ultimate plant size was unspecified, the tiny seedling ‘Yellow Currant’ received 2½-ft. spacing.

It leaped out of its 5-ft. cage, travelled 4 ft. to the adjacent 8-ft.-high cornstalks. Frost finally conquered its vine at 11 feet. And, ‘Red Currant’ was depicted in the catalog as holding its delicious fruit on the vine until picked. Mine needed daily plucking. Otherwise, a carpet of half-inch red spheres resembling undernourished marbles appeared. The comments for ‘Yellow Currant’ should have warned that a neglected harvest would compete with the State Store’s deliberately fermented fruits. In the case of ‘Pineapple,’ its striking catalog portrayal — red streaks throughout its yellow flesh — obviously fit. Unexpectedly, it tasted scrumptious as well.

Still, the anticipation whetted by seed company descriptions falls short of actual adventures with the ‘love apple.’ It’s fascinating to see a specimen such as ‘Ruffled Yellow,’ already convoluted when the blossom petals fall, swell into size and attain its golden hue. Along with the crimson cultivar, aptly named ‘Liberty Bell,’ these stuffing tomatoes inspire you to create fillings worthy of their beauty. It is a joy to be the first in your circle to discover exactly how green ‘Green Grape’ is at its tastiest.

‘Sweet 100’ is a huge plant that literally produces hundreds of morsels. Tending the plants in the summer sun is more fun while savoring this vine-ripened delectable.

As anyone who has ever grown a tomato plant will attest, harvesting the bounty is



TOMATO VARIETIES

(Abbreviations after tomato varieties indicate sources — see box on page 12.)

1. Supersteak (H, TG, TS)
2. Carnival (TG, TS)
3. Carmello (S)
4. Peron (G, TG, TS, SB)
5. Egg (G)
6. Ponderosa Pink (H, N, TG, TS, SB)
7. Trip-L-Crop (TG, TS)
8. Pink Girl (H, TG, TS)



Tomato Bounty blue ribbon winner at 1990 Pennsylvania Horticultural Society Harvest Show.

- | | |
|--------------------------|------------------------------------|
| 9. Golden Sunray (H, TS) | <i>cherry and small</i> |
| 0. Orange Queen (TG, TS) | 16. Pink Cherry (G, TG, TS) |
| 1. Lemon Boy (N, TG, TS) | 17. Principe Borghese (CG, TS, SB) |
| <i>taste</i> | 18. Sweet 100 (CG, H, TG, TS, S) |
| 2. Precious (TS) | 19. Sundrop (TG) |
| 3. Macero II (H, TS) | 20. Yellow Pear |
| 4. VF 6203 (TS) | (CG, G, H, J, N, TG, TS, SB, S) |
| 5. Chico III (TS) | 21. Red Currant (TS) |

- | |
|--------------------------------|
| 22. Yellow Currant (G, N, TS) |
| 23. Green Grape (G, TS, SB) |
| <i>unusual and novelty</i> |
| 24. White Wonder (TS) |
| 25. Liberty Bell (G, TS) |
| 26. Ruffled Yellow (G, TG, SB) |
| 27. Jersey Devil (TS) |
| 28. Pineapple (G, TG, TS) |

Numbers 16, 18, 20, 21, and 22 are in clusters.
Some varieties have more than one specimen.



Show Off Your Harvest

**ANYONE CAN ENTER THE HARVEST SHOW
SEPTEMBER 21 and 22, 1991
FAIRMOUNT PARK HORTICULTURE CENTER**

Do you like to grow things? Then you probably love to show them off! The Harvest Show isn't just for vegetables: there are ribbons for cut flowers, plants grown in containers, artistic designs, preserved products, nuts, fruits and anything else you have growing (or can imagine growing) indoors or out in the fall.

Everyone is welcome to enter the Show (you don't have to be a PHS member to participate). You'll need a Harvest Show schedule of classes and awards, which tells you how to go about entering if you've never done it before. Pennsylvania Horticultural Society members automatically receive a schedule every April. If you need one, please call or write for one. Entry forms are included in the schedule, along with all the information you'll need to show off the best of your harvest.

Liz Hauck
Pennsylvania Horticultural Society
325 Walnut Street
Philadelphia, PA 19106
Phone: 625-8250

TOMATO CULTURE TIPS

You can save work by not pruning tomatoes. Studies show that unpruned, caged tomatoes produce the highest yields. Using plastic mulch also increases yield, permits earlier harvests, and obviates tiresome weeding. It is critical, however, that soil moisture level be at near capacity when the mulch is applied. According to Pennsylvania State University, soil moisture is not effectively supplied by rain or overhead irrigation to small plants growing through plastic mulch. Aphids and flea beetles may need control early in the season. Ample space between plants promotes air circulation and helps prevent fungal diseases. The often-recommended 3 ft. between plants is too close for both the cherry and large varieties pictured.

pure pleasure. One is amply rewarded when a little-known specialty turns out to be a real winner. Most tomatoes are culinary treats, but exploring how different varieties taste adds another dimension. Fresh white tomato sauce pizza is exquisite — its mild sweetness seasoned with shallots, fresh Greek oregano and lemon thyme. Plump, flavorful 'VF 6203' is widely grown commercially in California. It also performs well in southeastern Pennsylvania gardens. While the climate in the Delaware Valley is not especially suited for sun-drying, the intense tomato taste of small red 'Principe Borghese' demonstrates why the Italians raise it for that purpose. The lovely shade of 'Pink Girl' beautifies a platter of sliced tomatoes, particularly when brightened by 'Orange Queen' and 'Lemon Boy,' and accented by 'White Wonder.'

Surprise your guests with an edible centerpiece at your next dinner party. A variety of tomatoes, augmented with fresh herbs and edible flowers, makes an interesting, fragrant, and beautiful display. The myriad

shapes and sizes captivate the eye, and all tomato colors and shades seem to complement one another. Tomatoes keep for days at room temperature, or you can eat them right away.

Growing an array of tomato varieties is adventuresome and gratifying. The only risk is that you may become addicted.

SOURCES

The Cook's Garden (CG)
P.O. Box 535
Londonderry, VT 05146
(802) 824-3400
Catalog \$1.00

Harris Seeds (H)
60 Saginaw Drive
P.O. Box 22960
Rochester, NY 14692-2960
(716) 442-0410

Johnny's Selected Seeds (J)
Foss Hill Road
Albion, ME 04910
(207) 437-9294

Gleckler's Seedmen (G)
Metamora, OH 43540

Nichols Garden Nursery (N)
1190 North Pacific Highway
Albany, OR 97321
(503) 928-9280

The Tomato Seed Company, Inc. (TS)
P.O. Box 323
Metuchen, NY 08840

Tomato Growers Supply Co. (TG)
P.O. Box 2237
Fort Myers, FL 33902
(813) 768-1119

Seeds Blum (SB)
Idaho City Stage
Boise, ID 83706
(208) 343-2202
Catalog \$3.00

Shepherd's Garden Seeds (S)
7389 West Zayante Road
Felton, CA 95018
(408) 335-6910

Dorothy Noble experiments with specialty vegetables, particularly solanaceous crops, near Phoenixville.

DESIGN CLASS:

A Mass Arrangement of All Fresh Plant Material

"Out of Darkness into the Light"

by James Hayden

When I saw the shade of purple the committee had selected for the background, I knew this was the class I wanted to enter. It was the first time I'd entered the Harvest Show, and also the first time my wife, Amanda, and I entered together.

That rich purple was our inspiration. After I'd seen it, I kept looking for anything that would go with it. I chose several containers and even painted one a complementary color that blended in a striking way with the background. In the end, I finally settled on a Nantucket white-washed basket. Its softness blended, yet did not compete with the flowers or background.

The collection of flowers and plants started as a mental list, and we watched things growing in our gardens, neighbors' gardens, and along the roadside. When it came time to collect for the actual arrangement, we had some unusual and familiar specimens.

Our garden was a wealth of flowers, and it supplied much of what we used. Dusty miller repeated a soft color in the basket and brought highlights to the arrangement. The hydrangea was creamy with just a hint of pink around the edge, which blended to a dusty rose; lisianthus was a deep purple. Blue scabiosa, hybrid delphinium, which went from light to dark blue, and rose hips also came from our garden. Our passion vine was grown for the Show, and we used the flowers and vine in this arrangement. Later, I dried it and used it in the spring Philadelphia Flower Show. The peach and coral zinnias also came from the garden.

A neighbor cheerfully donated a dahlia that was white-tipped in cranberry. Along a country road, Amanda and I stopped to harvest pokeberry, which reminded me of



tiny grapes and repeated the rich purple color of the background. These with some other flowers were abundant in the basket.

James and Amanda Hayden live in an old farmhouse in Ambler that they've restored. In their free time they enjoy developing and changing their garden.

James and Amanda Hayden won The National Council of State Garden Clubs Tricolor Award as the outstanding blue ribbon winner selected from Design Classes 5, 6 and 9. "Perfection," wrote the judges.

photo by Ira Beckoff



SQUASH BOUNTY BY THE BASKET



by Elise Payne

My vegetable garden usually ranges from 250 to 400 perimeter feet. I grow zucchini, beans, and tomatoes as well as plants ranging from flowers for drying to unusual-colored vegetables. But most of the space, and indeed all of it if the plants had their way, is taken up with the vining crops — pumpkins, squash, gourds, melons, and the like.

This basket includes 12 different kinds of squash. Generally, a squash is anything not considered to be a pumpkin, but taxonomically all pumpkins are in the squash genus *Cucurbita*, based on the reproductive structures. Acorn squash, zucchini, vegetable spaghetti, scalloped squash and most pumpkins are in the species *C. pepo*. Butternut squash, 'Kentucky Field' pumpkin and a few less well-known pumpkins are in the species *C. moschata*. Then, 'Buttercup,' hubbard squash, 'Big Max' and some other very large pumpkins are in the species *C. maxima*.

So how does one deal with all of this space for the cucurbits without feeling trapped in Mr. McGregor's garden? First incorporate 5-10-10 fertilizer and/or compost into about a three-foot diameter "valley" of soil (as opposed to a "hill," to aid with water direction when watering). Then plant your seeds from mid-May to early June after the soil has warmed, with the recommended spacing. The new bush varieties take up much less space, produce less, but still are quite acceptable for the average gardener.

After a good rain, use black plastic mulch (or the new degradable sheet mulch) for the squash that don't send out feeder roots along their vines (spaghetti squash, mini pumpkins, zucchini, acorn squash). For the types that do root along their stems, I use newspapers covered with straw, salt hay, or grass clippings so the feeder roots

SOURCES

W. Atlee Burpee Co.
300 Park Avenue
Warminster, PA 18991-0001
(215) 674-9633

Spaghetti squash (7)
Sugar pumpkin (6)

Cook's Garden
P.O. Box 535
Londonderry, VT 05148
(802) 824-3400

Rouge Vif d'Etampes pumpkin (4)

Henry Field Seed & Nursery Co.
Shenandoah, IA 51602
(712) 665-4491

Jack-Be-Little pumpkin (3)

Gurney's
110 Capital Street
Yankton, SD 57079
(605) 665-1671

Butterbush butternut squash (8)

Harris Seeds
60 Saginaw Drive
Rochester, NY 14692-2960
(716) 442-0410

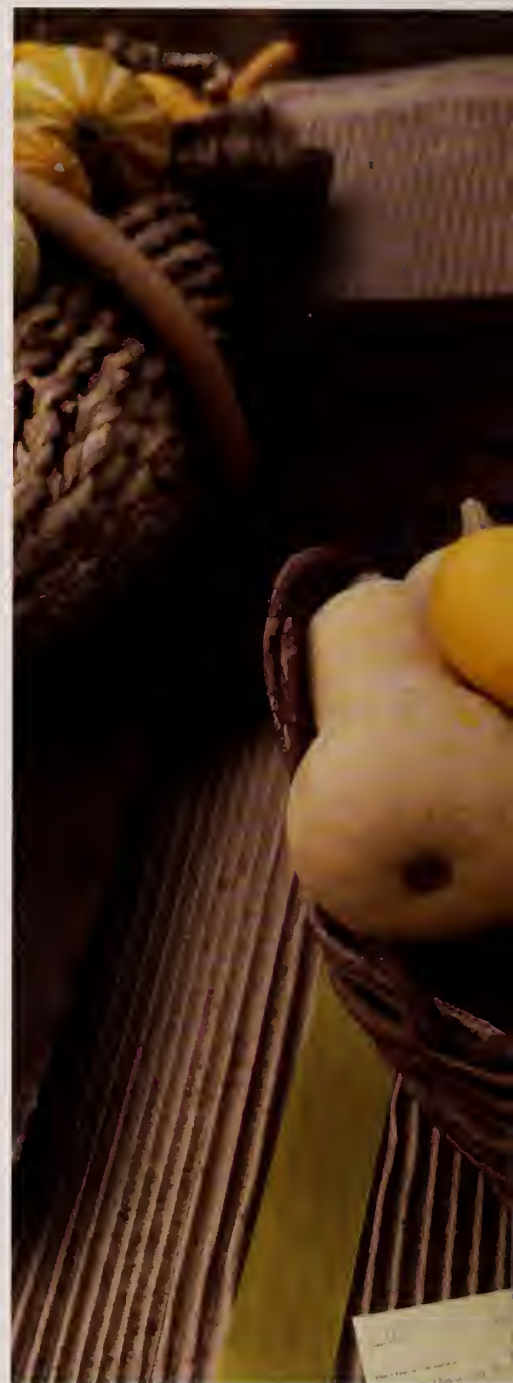
Orangetti spaghetti squash (2)
Sunburst squash (5)
Table ace acorn squash (1)

J.W. Jung Seed Co.
Randolph, WI 53957
(414) 326-3123

SunDrops Hybrid squash (9)
Waltham butternut squash (not shown)

George W. Park Seed Co.
Cokesbury Road
Greenwood, SC 29647
(803) 223-7333

Cream of the crop acorn squash (10)
Peter Pan scallop squash (11)



can go through to nourish these vigorous growers. Ideally, once a month a liquid fertilizer is sprayed over the vines that are "running," for additional fertilizer.

Watch for leaves drooping in the heat of the day and then perking up at night. This is a sure sign of the dreaded squash borer and calls for immediate surgery. Look for the borer's entry hole near the ground where some frass is an indicator. Arm yourself with a scalpel or a small knife. Starting at the hole incise the stem one to two inches each way while prying gently for the white



borers. After you have extricated them, pour a gallon of diluted liquid fertilizer over the area and cover the cut stem with about three inches of soil so new roots will form. This treatment should rescue your squash so it can produce in quantity another day.

Given a reasonable amount of moisture, only a few insects and a minimum of weeding, thanks to the mulch, you should have various crops of squash to carry you through the summer and well into the winter, some nice specimens for the Harvest

Show and maybe your own truly home-made pumpkin pie.

Elise Payne is co-chair of Vegetables and Fruits for the Pennsylvania Horticultural Society's Harvest Show. She holds a Longwood Garden Certificate of Merit, and is a graduate of the Arboretum of The Barnes Foundation. Elise has held many posts as a Philadelphia Flower Show volunteer and has won blue ribbons as a horticultural exhibitor. She is a representative for Brushking, a horticultural tools company.

Squash varieties clockwise from the top: 1. Table Ace acorn squash, 2. Orangetti spaghetti squash (barely visible), 3. Jack-Be-Little pumpkin, 4. Rouge Vif d'Etampes pumpkin, 5. Sunburst squash, 6. Sugar (pie) pumpkin, 7. Spaghetti squash, 8. Butterbush butternut squash, 9. Sundrop squash, 10. Cream of the Crop acorn squash, 11. Peter Pan scallop squash (center). Not visible here is the species butternut squash.

See box on page 14 for Sources.



FLORAL BOUNTY

 by Patricia Phillippi

photo by Ira Beckoff



16

Todd and Patricia Phillippi's floral bounty basket, with 50 varieties of flowers, won a blue ribbon at the 1990 Harvest Show.

Harvest-time, for our family, stirs a special feeling of thankful celebration and sharing. Cooler evenings invite us to sit longer in the garden, surrounded by the summer's lingering beauty. Each year, we look forward to the Harvest Show, where our children delight in hay rolling and pumpkin painting, and we ogle the most spectacular home and community-grown flowers and vegetables. We liken the Harvest Show to a family reunion, where gardening tips are traded like recipes, others' horticultural achievements are cheered, and laughter and fun abound. For the 1990 Harvest Show, we decided to celebrate the floral "fruits" of our garden and to share their beauty and variety with others by creating a Floral Bounty exhibit.

It had been an unusually good summer in our seven-year-old city garden, a summer in which the flowers thrived with little extra

fussing. Though small (750 sq. ft.), our garden featured a wide variety of plants, due in part to its experimental nature (my husband, Todd, tests a plant's maintenance requirements and performance before specifying it in his garden design business). A harmonious color scheme united the many different types of plants within the garden.

As the Harvest Show neared, we surveyed the "crop" and found an abundance of varieties still vibrant. This presented a challenge. The rules for entering an exhibit in the Floral Bounty class required a minimum of five different varieties, grown by the exhibitor, and arranged for effect. We had no problem meeting the minimum variety requirements, but how could we attractively display flowers as disparate as enormous dahlias, miniature roses, exotic orchids and waterlilies, and common

begonias? Clearly, our flowers would not lend themselves to a traditional arrangement. We decided instead to create the appearance of bountiful blooms freshly picked on a morning's stroll through the garden. Our next dilemma was finding an appropriate container. After perusing many garden catalogs, we found a beautiful floral basket in Smith and Hawken's, which thankfully they rush-delivered.

By midnight, the night before the Harvest Show, our entire dining room was crammed full of flowers: we were overwhelmed. Earlier in the evening, we had helped three of our four children cut the flowers from their "barrel gardens" to arrange the finest for their entry in the annuals collection class (for which they received a blue ribbon and Junior Achievement award, we proudly add!). Then, when they were all snug in bed, with flashlight in hand, Todd began cutting



A joy-filled end to a season in the Phillippi children's garden as their combined effort yielded a Harvest Show blue ribbon and Junior Achievement Award for Ruth age 7, David age 5, and Justin age 3.

flowers by the armloads to condition them overnight, as instructed by his grandmother, a former floral judge. Meanwhile, I searched for enough buckets, pitchers, tubs, glasses, absolutely anything to contain them. As we collapsed into bed that night, we questioned our sanity as well as our ability as novice arrangers to put together this jungle of flowers.

At 5 a.m. we were up, ready to attack the actual arranging. We'd lined the basket with plastic and laid a large piece of floral foam in the bottom. Working on opposite ends of the basket, Todd and I began inserting the largest flowers — dahlias, hollyhocks and cannas, to form a wide arching base. Then, we began layering many different varieties of flowers into the foam, to build a mounded shape. Among these were hyacinth bean, malva, hibiscus, Japanese anemone, salvia and buddleia.

After we formed the basic shape, we put the smaller or more delicate flowers, such as roses, asters, chrysanthemums, fuchsia, waterlily and orchids, into floral picks. These were inserted among the already arranged blooms for fullness and prominence. We worked feverishly, hoping our children would sleep late, and we'd finish in time. When completed, our Floral Bounty basket displayed over 50 varieties of flowers, weighed a ton, and we were delighted with it.

Bringing the basket into the bustling Horticulture Center on the morning of the Harvest Show opening was, for us, the most satisfying moment of all. To see the excitement and pleasure it brought to our fellow gardeners, as they set our entry on display, made us feel that all our effort was worthwhile. We were honored to receive a blue ribbon in the Floral Bounty class.

Our family and plants have recently moved from our city garden to a large property in Bucks County, which presents enticing possibilities for gardening in the years to come. Though our garden may not be established enough this year to produce another Floral Bounty entry for the Harvest Show, we look forward to seeing other exhibitors who, like us, find themselves celebrating harvest-time with a touch of creative "midnight madness."

Patricia Phillippi enjoys adding the finishing touches to the family garden, master planned by her husband, Todd, by planting romantic borders, urns and window boxes. This smaller scale gardening is manageable in the midst of raising and home-schooling their children (also budding gardeners).



A COUNTRY VEGETABLE

Every year our vegetable garden is a new challenge. We start with a tour through the Market Place at the Philadelphia Flower Show to buy seeds. After that, we also shop for them at the local hardware, garden centers or order from seed catalogs. The weather governs the date of rototilling, which is done by a dear friend who has a wonderful rig on his tractor. He tills the soil deeply (about 12 inches), which is especially important for carrots. We grow certain vegetables every year: broccoli, cabbage, Brussels sprouts, string beans, tomatoes, peppers, cucumbers, lettuce, beets, carrots and squash. Several different varieties of lettuce, squash, peppers, beans and tomatoes make growing and eating more interesting. Raddichio, turnips, tatsoi (a Chinese green vegetable), Swiss chard, pumpkins, radishes, peas and lima beans are all usually a part of the garden, too.

photo by Ira Beckoff

We plant vegetables at different intervals so the harvest is spread into the fall. Lettuce, squash, cucumbers, peas and string beans always have at least two plantings. We are in and out during the summer and plan the garden so that we harvest in July, and have a second fall garden. We mulch the entire garden with several thicknesses of newspaper, with hay or straw on top. We're careful not to use papers with colored ink. Without this mulch neither the garden nor we would survive. It keeps the moisture in, the roots cooler and the weeds down. Having only an old well, we rarely water.

The biggest joy of having a vegetable garden is being able to pick vegetables for supper a half hour before eating.

Every year we put up green tomato relish, bread and butter pickles, pickled green beans, pickled peppers, pickled cherry tomatoes and pepper relish along with raspberry jelly and jam, pepper jam and herb jellies. Blueberries and raspberries add to our pleasure; we freeze the surplus for the winter.

•

Sue Armstrong and her husband Dick live and garden on a farm in West Chester, which they have landscaped themselves. Sue has exhibited at the Harvest Show for at least 15 years; she was co-chair of the 1990 Herb Section. She chaired the Horticult section of the 1990 and 1991 Philadelphia Flower Show and is a member of the West Chester Garden Club.



GARDEN

 by Sue Armstrong



BOUNTY BY THE BASKET A WINNER

Sue Armstrong's Bounty by the Basket won top honors at the 1990 Harvest Show: the Bronze Medal and the Award of Horticultural Excellence. Glowing under the weight of the praise were the following glorious vegetables:

Hybrid zucchini (Burpee)
'Pic n' Pic' Hybrid yellow squash (Burpee)
Tatsoi — Chinese green vegetable (Johnny's Selected Seeds)
'Pretty Purple' pepper (Seeds saved)
Lima bean 'Dr. Martin' (Seeds saved)
Eggplant American (Buy plants)
Pencil pod wax yellow snap beans (Burpee)
Bush Blue Lake green beans (Burpee)
Italian flat green snap beans
Lettuce 'Green Ice' (Burpee)
Cherry tomato 'Sweet Million' (Stokes Seed)
Yellow pear tomato (Save seed)
'Beefsteak' tomatoes (Buy plants)
Broccoli 'Green Comet' (Buy plants)
Peppers — Fushimi Green Long Peppers
Peppers 'Black Prince'
Thai hot peppers (Park Seed Co.)
'Canape' bell peppers (Harris Seeds)

W. Atlee Burpee Co.
300 Park Ave.
Warminster, PA 18974
(215) 674-4915

Harris Seeds
961 Lyell Ave.
Rochester, NY 14606
(716) 458-2882

George W. Park Seed Co.
Cokesbury Rd.
Greenwood, SC 29648
(803) 223-7333

Stokes Seed
Box 548
Buffalo, NY 14240
(416) 688-4300



DEHYDRATING VEGETABLES AND FRUITS

photo by John P. Swan



A tray of shoe-stringed peppers goes onto the dehydrator. These will dry rather quickly at 125° in about two hours.

There's a seductive primal satisfaction in the process of putting food by for the long, cold winter ahead. Of course, Delaware Valley winters haven't been notably long or cold since the winter of 1777-78 when Washington's troops shivered at Valley Forge, but still we enjoy the process of preserving, and expanding the family diet at the same time.

The kitchen gardener's golden rule is "Eat what you grow and grow what you eat." Applying this maxim to putting food by, let's check out the three basic methods of food preservation: canning, freezing, and drying. The oldest, easiest, safest, cheapest, and most storage-space efficient is surely drying (dehydration in modern terminology). So, let's check out dehy-

dration.

Drying **what?** **why?** and **how?** you ask. For a starter, from your own kitchen garden you can dry your surplus: tomatoes, peppers, cucumbers and zucchinis, celery, onions, parsley, and chives, rosemary, dill, sage and mint. From your own berry patch you can dry any surplus: strawberries, raspberries, blackberries, gooseberries, blueberries or currants. It is true that very seedy berries must be pureed and pressed through a coarse sieve and then processed into fruit leather. But what delectable fruit leather these unadulterated berries make, almost unobtainable in stores and dearer than caviar when available. Cut into one-inch bite-sized roll-ups, this leather is **not** for offering to the after-school crowd, but

should be reserved for the tea tray.

If you happen to have surplus seedless grapes, hardy kiwis, oriental pears or sweet cherries, these too may be dried, either sliced for munchies or pureed for fruit leather. If you find yourself in a time squeeze, purees can always be frozen in 24-ounce cartons for processing into leather at a later date.

Apples, pears, peaches, nectarines, plums, cherries, and berries can be procured from any one of the excellent commercial orchards in the Delaware Valley (often at pick-your-own bargain prices). During the winter, watch for special bargains in bananas, fuzzy kiwis, and fresh pineapples at your local supermarkets. These all make great lunch fillers, TV snacks, and travel

FROM YOUR KITCHEN



by Joan Brinton Johnson

photo by Ira Beckoff



The author's dried peppers, cucumbers, tomatoes, onions, parsley and squash on exhibit at last year's Harvest Show.

munchies for trail trips and those four-hour, no-stopping car trips.

There are some quirks to drying for which no booklet quite prepares the novice. All foods shrink dramatically during dehydration, both in size and weight. Some foods lose half their size and up to 90% of their weight. That's why dried foods take up so much less storage space than foods preserved by other methods.

It is important to have all pieces of food of equal thickness on a drying tray (never more than $\frac{1}{2}$ inch or less than $\frac{1}{4}$ inch) so they will dry evenly. It is okay to have pieces of food touching each other when placed on a tray, they will shrink apart during the drying, but do not squash them together or overlap them.

Slicing evenly is an art, with techniques varying from food to food. Tomatoes are held at eye level and sliced with a long serrated knife; bananas can best be sliced with a hard-boiled egg slicer. Do not peel tomatoes at all. Use large, thin-skinned tomatoes for drying and leave the Italian varieties for pasta sauce. Peel kiwis, apples, and eggplants *after* they are sliced. (Also core apples and pears *after* slicing. Trial, error, and practice are the best teachers.)

yes, you can —

A. make beef jerky — someday — but jerky is not for beginners, not even for intermediates.

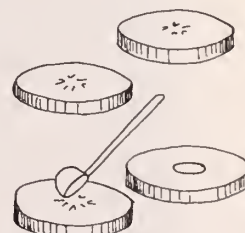
B. dry flowers and herbs — but flowers are apt to be too thick or dense for drying in

continued

For easy preparation core and skin apples and pears after they're sliced.

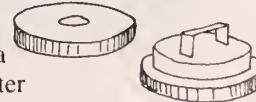


Core with a
mellon baller



Skin with a
cookie cutter

(approximately $2\frac{1}{2}$ "- $3\frac{1}{2}$ ")





photos by John P. Swan



Top: Lifting dried peach fruit leather from the tray can be a little tricky. After lifting, cut the leather into eight pie-shaped pieces with scissors. Roll tightly from the inside, ending up with a neat four-inch roll. Wrap each roll tightly in a six-inch square of wax paper twisting ends; they'll look like salt water taffies. Bottom: A tropical fruit tray of bananas, kiwis and pineapple ready to be dried at 135° can take from six to eight hours.

a dehydrator and many will lose color or shrivel up completely from the heat. Not all herbs react well to heat-drying either.

If you are planning on serious drying, start saving your peanut butter and instant-coffee jars. They have nice wide mouths and sturdy, screw-on plastic lids. You *can* use jelly jars with screw-on lids, but not the quilted glass type. You can't see the contents clearly. Six-inch-tall jars are about the best for storage. Four-and-a-half-inch apple butter jars are perfect for storing 10 wrapped fruit-leather rolls upright. Zippered plastic bags can be used for temporary storage but they are not as air-tight as screw-top glass jars (an important factor with dried food), and they are unwieldy to pile on a shelf or in a freezer.

Be sure you label all containers with waterproof ink. Note date of processing and plant variety. Example:

9/19/91 Apples Granny Smith

The flavor of Granny Smith apples is not the same as of Rome Beauties.

Food that has been dried at a temperature of 125°F, packaged in a screw-top glass jar, and finished for three days to a week in a freezer at about 20°F is not harboring any unfriendly bacteria. It can be stored on a dark shelf at 65°F (the cooler the better, of course) for up to a year. On general principle, I pitch out any food still on the shelf when the next preserving season rolls around.

Once you start drying foods with a handy dehydrator, you get inspired to experiment with all sorts of things. I discovered that, after squeezing, lemon and orange peels can easily be shorn of pulp and dried quite quickly. You can pulverize the peels in a food processor or coffee grinder. Dried citrus zest is a bit of magic for muffins, breads, hollandaise sauce, glazed carrots and lemon meringue pie. I am also saving empty store-bought spice bottles now.

Resuscitating dried foods is another area for creativity. Since one of the major merits of dried fruits and vegetables is that they provide healthy and tasty nourishment free of fats, salts, processed sugars, cholesterol, lactic acid and wheat flour, don't spoil it all by introducing additives during the basic drying process.

But what about the gourmets in the crowd? Try marinating a few slices of dried tomato in virgin Italian olive oil, balsamic vinegar, dried basil and other herbs of your choice. You will have the equivalent of "sun-dried" tomatoes that will make an

Italian weep with envy. Simmer the contents of a 36-slice jar of dried apple rings in two cups of fresh cider until the rings are plumped (cut the rings in half with scissors first, if your prefer). Then, arrange the apple slices in your favorite pie shell with a dash of cinnamon and a dab or so of butter, and bake. You will be ready to challenge any cook in Lancaster County.

Save leftover vegetable bits, in a jar in the refrigerator, to throw into meat loaves, gravies, soups and stews. Save fruit bits for adding to chicken, turkey, or pork stuffings.

Economize. Improvise. Fantasize.

finding the hydrator

How do you get a handy dehydrator? You certainly can't depend upon the sun and three consecutive days of dry weather in the Delaware Valley. The cumbersome old-fashioned wood or galvanized metal contraption with square screens and source of heat that would give a fire marshal a fibrillating heart beat, won't do. You want a neat little round, easily portable, counter-top machine, with a compact electric heater, fan and thermostatic temperature control in its base.

Round dehydrators dry food more evenly and efficiently than square models. Made of plastic, which cleans as easily as a Teflon frying pan, the trays are stackable and can be increased or decreased in number at will. Each tray holds about one square foot of prepared food. I find six trays optimum. Some larger models' motors draw more current and are advertised as handling up to 35 trays. That boggles my mind. I can just envision 35 trays of sliced tomatoes shooting off across my kitchen as I attempt to check on the next to bottom tray. And how would you store the monster? My machine lives on a kitchen counter beneath a china cupboard. It can be left on all night without heating up the bottom of the cupboard.

My dehydrator is a Harvest Maid, Model FD-50 and can handle 12 trays, should I ever want to live dangerously. It is 13 in. in diameter and, holding six trays, is just under 11 in. high. This model comes with four trays, a plastic screen liner and a solid plastic liner for making leathers or drying foods with small seeds. You can order additional trays and liners by mail or phone from the manufacturer. With two more trays, six more screens and six more solid liners, you can do anything. The total investment is about the same as for a six-quart stainless steel pressure cooker/canner,

which is about the same size but weighs twice as much and isn't nearly as much fun to use. I strongly suggest you apply to the family birthday maven, and include directions to any of the dealers listed below.

Good luck. Have fun, and enjoy some primal satisfaction.

COOKBOOKS

Ball Blue Book, The Guide to Home Canning and Freezing, Ball Publishing, Consumer Products Division, Consumer Affairs, 345 South High Street, Muncie, IN 47305-2326, 1986.

Harvest Maid, The Complete Guide to Food Dehydrating, Alternate Pioneering Systems, Inc., 7900 Computer Ave., Minneapolis, MN 55435, 1984.

How to Dry Foods by Deanna DeLong, H.P. Books, P.O. Box 5367, Tucson, AZ 85703, 1979.

Putting Food By by Ruth Hertzberg, Beatrice Vaughan and Janet Greene (4th edition), The Green Press, Brattleboro, VT 05301, 1988.

FOOD DEHYDRATORS

(Harvest Maid, Model FD-50 recommended. Approximately \$100. Does not include tax and handling.)

Alternate Pioneering Systems, 7900 Computer Ave., Minneapolis, MN 55435 (direct sales).

Ace Hardware Stores (consult phone book for nearest store)

Best Stores (catalog)

Gardener's Supply Co., 128 Intervale Rd., Burlington, VT 05401.

J.C. Penney (catalog)

Joan Brinton Robinson first put food by as a teenager when she earned her spending money creating "Jellies by Joan" for her mother's friends. Joan enjoys dried foods so much she suggested creating a special class for them at the 1990 Harvest Show. Her collections of dehydrated vegetables for dips, tropical fruits and leathers, won several ribbons.

LET THE MACHINES ROLL

 by Walter Chandoha

Machines save energy and time in the garden. From an impressive assemblage of the author's machines, the leaf blower emerges as a favorite for the busy writer/photographer's farm.

Here on our farm in western New Jersey we couldn't manage without mechanical and motorized help. Over the past 30 years we've accumulated an assortment of power machines to help ease our chores and to get them done faster. Our most recent acquisition is a four-wheel drive, 34 horsepower, diesel tractor (Kubota) with a front-end loader. This machine is a real back-saver as well as a fantastic time-saver. With it I haul stone in the front-end bucket from the streams and woods to my gardens to build walls; garden trash goes to the compost pile and finished compost is carried in the bucket from the pile back to the garden. Turning over the compost pile (12x12x4 ft.) with the bucket is a 10-minute effortless job. The bucket is also used as an elevator for pruning fruit and Christmas trees; for pulling up sections of no-longer needed split-rail fencing; for carting split firewood from the barn to the house and for hauling bales of peatmoss and bags of fertilizer from the driveway up to the barn for storage.

In the spring, I attach a 50-inch tiller to the power take-off on the back of the tractor and get my vegetable garden ready for planting in a few easy hours. With this powerful tiller new gardens are created effortlessly in the lawn or in parts of the pasture. Thanks to this mechanized monster I now have a perennial bed curving around one end of the pool, a cutting garden just over the fence in the pasture, an ornamental grass island in the middle of the lawn, and by the time you read this I'll have a brand new vegetable/flower/herb garden in the



photos by Walter Chandoha

After fall leaves are added to the compost heap, rakes, pitchforks and baskets are idled until next fall. The leaf blower will be used to clear walks of dry snow in winter. In spring and summer, instead of a broom, it will be used to clear garden debris from decks and patios.

field between the house and the lower barn.

When the tiller is no longer needed it's replaced with a brush hog mower (Woods) to keep weed trees and multiflora roses from invading the pasture and to keep the fields planted with Christmas trees.

mowing with a tractor

To cut my fairly large lawn (I'm reducing its size more each year), we use another small farm tractor (International Harvester) with a 50-in. belly-mounted mower; two Graveleys, one with a rotary mower, the other with a 42-in. sickle bar and a self-propelled 21-in. mower (Honda) with a clipping-catcher bag.

For incidental trimming we use two string trimmers — one gas powered, the other cordless (both Weedeater) and an electric hedge cutter (Black and Decker) to

prune the yew hedge between the house and the road. For heavy tree and limb removal around the farm and for getting firewood from the woods, I use a 16-inch chain saw (Homelite).

All of these machines are great time-savers but they also make a tremendous amount of noise — especially the chain saw. And to my ears there is nothing more cacophonous than a running motor of any kind. I hate the sound of running motors so much that even in the hottest climates away from home I shut off hotel room air conditioners before retiring.

If I hate the sound of motors so much why then do I put up with these noise-making machines? Necessity. Maria and I maintain our farm and gardens with very little outside help. Several times a year we get a man in to replace fence posts as



When the tiller is no longer needed it's replaced with a brush hog mower (Woods) to keep weed trees and multi-flora roses from invading the pasture and to keep the fields planted with Christmas trees.

needed, to do some heavy pruning or to remove unwanted trees. We also get some help from our grown children, their spouses and friends when they visit. But our six kids travel a lot and when chores need to be done, they're not always here to lend a helping hand.

When they were small, fall leaf raking was a fun chore for all of us. What with their jumping into the piles and covering the cats and dog with leaves, and having leaf fights, the job of clearing the lawn maybe took twice as long as it would have without their "help." Eventually, however, the leaves were removed to the compost pile and the baskets were stacked and the bamboo and metal rakes were hung up until the following year.

When our kids were in high school they raked up the fall leaves on their own, with an occasional assist from me and Maria. Then as they went away to college we gradually lost their help and now that they are living away from home, we can no longer count on their help for fall leaf removal. If they visit in the fall they rake, otherwise we have to do it.

our best investment

Fortunately, both Maria and I enjoy leaf raking. On sunny but cool fall days there is nothing more invigorating than mid-day hours of energetic raking and hauling. It's quiet, it's peaceful and it's healthy. But it's also time consuming. And we have a lot of leaves. Should writing or photography assignments take me away from raking, the leaves accumulate. Then fall rains soak the leaves and they mat and a pleasant chore now becomes an onerous one. More than once the leaves were not raked in the fall and the lawn suffered for it. With some spring reseedling it came back to its former glory, but given a choice, I'd rather go into winter with a clean lawn instead of a leaf-covered one.

continued



Top: The 50-ft. tiller powered by the tractor effortlessly turns under cover crop in late April. The succulent new growth on the winter rye is high in nitrogen; it quickly decomposes to add nutrients and humus to the soil. Bottom: Here the tractor moves seasoned firewood from barn to house in a fraction of the time it would take to do the same chore with a wheelbarrow. The author has since replaced the Balens/Iseki pictured here with an even more powerful Kubota tractor.

LET THE MACHINES ROLL

We use the leaf blower throughout the year.

My friend Dan Mumaw solved my problem, but he wasn't even aware I had a problem. When I visited him one October I interrupted his fall clean-up routine, which centered around his using a gas leaf blower to remove the leaves from his lawn. I was impressed at how efficiently and how quickly the leaf-blower did the job. Sure I was aware of the existence of leaf blowers, but I never considered one for several reasons: Mostly, I did not want still another noisy machine to replace a healthful and enjoyable chore. And I didn't want the bother of maintaining another machine.

But faced with a lawn full of leaves and some pressing assignments and none of our kids available to rake and pick up, I weakened and bought a leaf blower (Sears). One of the best machine investments I've ever made! Used in combination with my big mower and the leaf-catching bag on my small mower, I can rid my lawn of leaves in a fraction of the time it took to rake, pile and collect.

My procedure is quick and easy. First the leaves are windrowed with the blower. Next the windrowed leaves are shredded with the big mower. Several passes over the leaves reduces them to pieces no larger than a quarter. Finally with the small mower I pick up the shredded leaves in its



Wait until all the leaves fall before removing them. While waiting fall rains might wet them but tough, leathery oak leaves resist matting and quickly dry out during crisp, sunny, fall days.



Top: Leaf blowers work best when leaves are brittle-dry. Rather than try to clear an entire lawn from end to end, it is more efficient to blow the leaves into a pile or long multiple rows for later gathering or shredding. Bottom: Leaf collecting is a fun chore for kids. But don't try to rush the job, allow them the pleasure of jumping into raked-up piles, burying each other and having leaf fights. Eventually a load will reach the compost pile.

collecting bag, which I then empty into a two-wheeled cart. When the cart is loaded it's wheeled to some part of the garden where it's emptied. The leaves are later used to mulch perennials or fall-planted alliums after the ground freezes.

Another reason I hesitated to buy a leaf blower was I thought its time of use would be limited. I couldn't see spending money for a gadget that would be used for maybe one week out of the year. Actually we use it throughout the year — mostly as a broom substitute to remove grass clippings from the pool terrace and the driveway; to clean the porch and patio of the stuff shed from nearby trees in spring and summer; and even in the middle of winter to clear the driveway of dry powdery snow.

Are leaf blowers necessary? Absolutely!

Mine is such a timesaver that I now have the time to plant shallots and garlic in October, which yield huge bulbs the following summer. Maybe the shredded leaves that go on the beds after the ground freezes contribute to their large size. So in a roundabout and farfetched way, my leaf blower is the reason for my outstanding shallot and garlic harvests.

Photographer/writer Walter Chandoha's work appears in many national publications including the *New York Times*, *Organic Gardening*, *Fine Gardening* and *Ladies Home Journal*. His photos have been featured on more than 300 magazine covers.

GARDENING IN THE SHADE

 by Toni Brinton

A move to a new home was the perfect time to break with the past and garden in new ways.

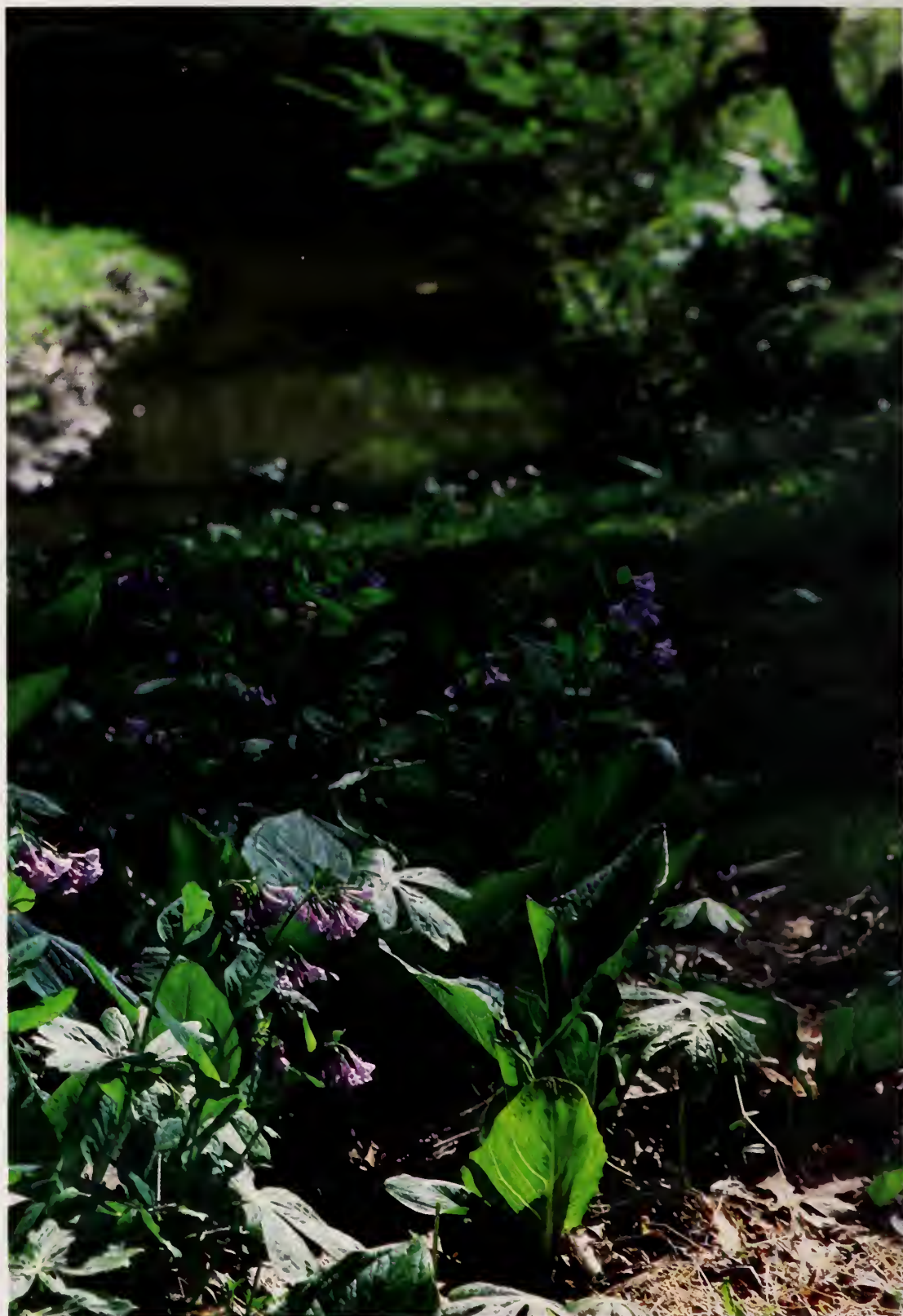


photo by L. Wilbur Zimmerman

Mertensia brightens the stream side of a shady garden in early spring.



The solar house with a greenhouse and decks perches on the south side of a ravine.

A natural garden surrounds our nine-year-old experimental solar house, tucked down the south side of a ravine in a deciduous forest of oak, hickory and beech. A meandering stream wanders through the bottom of the valley, adding its watery noises, its sparkle and its different habitat to the gardening opportunities. As the house itself was a departure from the norm and very different from our old Pennsylvania farmhouse, I decided also to break with my gardening past.

Acres of grass and bright sunshine were behind me. Now I needed the time to learn about shade plants, to study our new surroundings, to see where the sun pierced the dark forest, to learn what the woods are like in winter, and to inventory the plants already here. Dogwood (*Cornus florida*), spice bush (*Lindera benzoin*) and black haw, (*Viburnum prunifolium*) were some of the native flora I saw through the ankle-thick cords of wild grape that shrouded the trees, and the arm-like tentacles of honeysuckle that entwined around every bush, tree and itself.

When we told our contractor we wanted no landscaping installed, he raised his eyebrows. Parents and friends thought we were crazy, although they never said it.

When we moved into the house the last of March 1982, the ground around the house was bare, embarrassingly naked; no shrubs or evergreens at the foundations of the house, and no grass, not even a small patch.

No grass, my first request, was a distinct

So for the first time my husband and I began to garden together. He now knows the botanical names of much of our flora, and we share the excitement of finding a patch of *Trillium cernuum*.

change from the past. The late John Kistler, who designed the step-down terraces on the east side and other immediate areas around the house, pleaded with me to have just a little grass. He was absolutely right. A nice bit of level lawn acts as the frame for a garden. I look at beautifully maintained gardens and find grassy lawns very pleasing to the eye. They add scale, dimension and texture. The only problem with grass is that it has to be mowed, fertilized, raked. All of which takes time away from what I like to do best: work with plants. I had sat on a mower too many hours at our old farm and knew the time that took deprived me of

more time with the plants themselves. I hope John forgave my obstinate dictum: **No grass.**

So we began by rototilling aged manure, from a cousin's horse farm, into the compacted, rock and debris-filled earth. We constructed small east terraces for herbs and vegetables. Next was the clearing job, a monumental undertaking that went on for several years. Ripping, tearing and sawing the overgrown thickets of wild grape, Japanese honeysuckle, poison ivy and bittersweet (these hung from the top of the tallest trees to the forest floor. We found *Ilex verticillata*, totally shrouded and liberated a royal fern from strangulation. So for the first time my husband and I began to garden together. He now knows the botanical names of much of our flora, and we share the excitement of finding a patch of *Trillium cernuum*.

no formal beds

The second difference in our new garden is that there are no formal beds. Paths and walkways from which plants radiate outwards merge with the natural growth. Not formal, yet not without form. Many of our plants have become ground covers. It is somewhat like weaving a carpet. We use

continued

GARDENING IN THE SHADE

photo by L. Wilbur Zimmerman



photo by Toni Brinton



photo by L. Wilbur Zimmerman

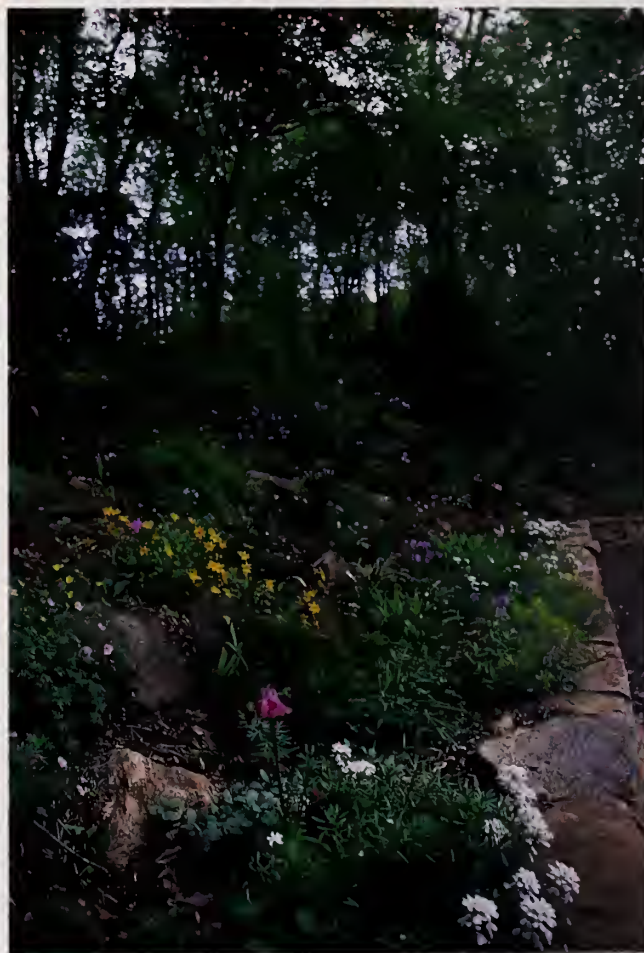
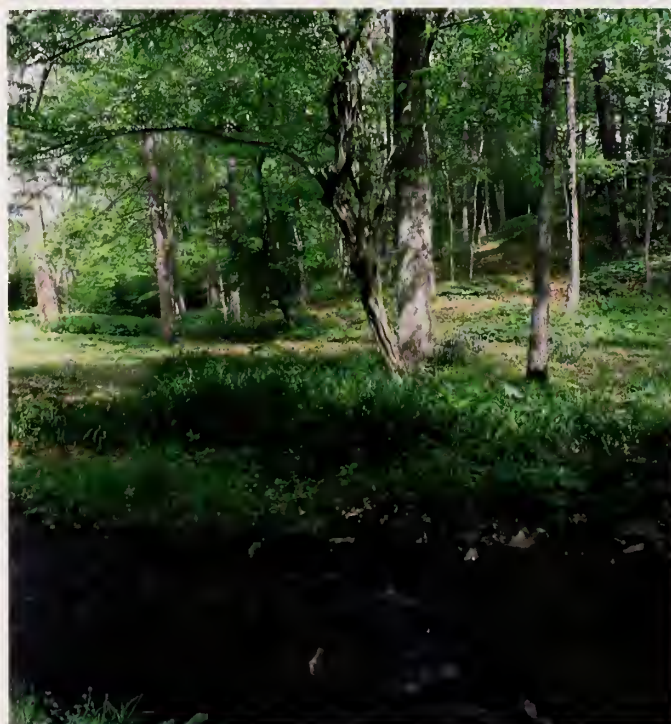


photo by L. Wilbur Zimmerman



Top left: The herb terrace and woodshed conveniently near the kitchen for easy access. Top right: The Abkhazian primrose (*Primula abchasica*), rare and unusual, blooms earlier in spring than other primroses.* Bottom left: The only concession to grass is on the grandchildren's playing field near the stream. Bottom right: The early spring rock garden viewed from the woodland path.

*See article "A Rare Primrose: Abkhazian Primrose" by Harold Bruce, *Green Scene*, March 1982, Volume 10.

different colors, different forms and textures, and try to envision it in all seasons with something to please the eye every day of the year. Drifts of the same plant, whether it be european ginger (*Asarum europaeum*), or daylilies (*Heemerocallis* sp.), or sweet woodruff (*Galium odoratum*), all replace grass.

That very first spring, may apples volunteered as our forest's ground cover. Large waves of their fancy cut umbrellas floated down the hillside punctuated by jack-in-the-pulpits (*Arisaema triphyllum*) in small gatherings. From April through the end of June these cover the dead winter leaf litter.

It took the envious eyes of a famous English plantsman, Maurice Mason, to point out to me how spectacularly beautiful was our common may apple. The English are not able to grow the may apple (*Podophyllum peltatum*) as well as it's grown here without any help, and he looked with awe at our natural carpet.

That lesson learned, I do not order daffodils by the bushel for then I would have a mixture of daffodils blooming spottily at different times. Instead I order 100-200 of the same variety and plant them in drifts. Each year I try to expand backwards to the earliest blooming and forward to the later blooming. Although I love tulips, the voles, who inhabit my woods, periodically devastate my favorite late-blooming *Hosta plantaginea*, then gobble up tulips for dessert. So I limit myself to the dwarf varieties and species tulips that can stand my rock garden crevices.

Masses of the native spice bush, *Lindera benzoin*, had naturally clumped and resown in our woods, and they remain on the left side of our drive just as they grew but cleaned of the honeysuckle that was strangling them. The not native winged euonymous (*Euonymus alata*), had been sown profusely by birds throughout our whole acreage. This amazing shallow-rooted shrub can be removed by a vigorous tug, unless it is a very old plant. As we weeded it away from the sole azalea (*Rhododendron periclymenoides*) we found growing here, we decided to put these plants to good use. Winged euonymous now stabilizes the horizontal and diagonal paths, and although we do prune these back some each spring to keep them from

getting too tree like, they have proved to be excellent free holders and hedgers.

On the north-facing side of the ravine are Christmas fern (*Polystichum acrostichoides*) in great clumps. A few scattered ones are on the south side, so we are moving these across the stream to provide solid fern cover in some south-facing areas. Ostrich ferns (*Matteuccia pensylvanica*) grows in natural colonies in the damp bottomlands

This area is a remarkably pleasant vista where in winter we watch the dreaded, but beautifully graceful, white-tailed deer and the red fox, followed by the big blue herons and the wood ducks that arrive with spring.

along the stream. Here also are the interesting skunk cabbages (*Symplocarpus foetidus*). Their enormous leaves look very lush for awhile and then creatures begin to eat them and they look ragged and tired; we had far too many. We called the Pennsylvania Horticultural Society Hotline and found no answers; against my best wishes, we tried some herbicide. Even that barely bothered the skunks. The only thing that eliminates the skunks is to keep the skunk cabbages cut back.

a playing field for grandchildren

I still do not mow anything, but my husband, that new gardener, needed a playing field for his grandchildren. Now retired from the business world, he cuts the skunk cabbages and when the may apples begin to look tired, he weed-eats those too. Although there is no grass around the house, he has in fact made a large grassy area down by the stream.

We have an agreement, my husband and I. If, in our old age, that grassy area becomes too much for us to physically maintain, we will just forget the stream and retire to the gardening areas around the house itself. We never sowed grass, but a wispy, soft volunteer just appeared and is mixed with a lot of moss. This area is a remarkably pleasant vista where in winter we watch the dreaded, but beautifully graceful, white-tailed deer and the red fox, followed by the big blue herons and the

wood ducks that arrive with spring.

Rhododendrons and azaleas, both evergreen and deciduous, are natural for the woods. This very large genus is tempting and fascinating in its diversity of forms as well as colors. We have bloom from March to July, beginning with *Rhododendron mucronulatum* from the Orient, and ending with *R. prunifolium*, an American native. What warms the gardener's heart is the happiness of the hellebore that self-sow as do the asarum and the lungwort, now making their own colonies and mass effects and providing cover under the rhododendrons.

We have found some boggy areas near the house as well as along the stream, which the *Primula japonica* adore. These, too, self-sow in profusion. Other primulas are happy in the shade so we have now about seven varieties that give a long spring season of bloom. In summer clethra perfumes the days and nights. We were surprised to learn that they would tolerate partial shade.

Light colors and variegated foliage are necessary in the shade, for as the greens darken over the growing season, it's necessary to have highlights in the woods; plants must stand out against the dark background.

the stars

Stars of the natural shady garden are many. In winter we have evergreen azaleas and a selection of evergreens to relieve the brownness of the forest floor. *Hamamelis x intermedia* 'Arnold Promise' provides its surprising yellow strap blossoms as early as February and looks best against a backdrop of snow. From March through May we have an abundance of bulbs and herbaceous plants that succeed each other to bountifully welcome spring. The Christmas rose (*Helleborus niger*) and all the many narcissus varieties are the spring stars.

Summer brings the hostas. From dwarf to mid to giant size, with white and yellow edges, or all yellow, or puckered blue, or ruffled green leaves, providing variety and diversity of form, and they even flower, some with fragrance. Hostas offer the shady gardener endless design possibilities, which can never all be explored. Since we look down from our decks to the pathway below, the hostas that grow here are an

continued

eyeful. Even non-gardening friends appreciate the patterns these remarkable plants weave.

Daylilies (*Hemerocallis* spp.) are bloomers in as little as six hours of sun, adding their clear colors to the summer days. In fall, the native witch hazel (*Hamamelis virginiana*), found blooming that first October, flourishes and sends out colonies now that it has no vines to inhibit its growth. It flowers every autumn. We have some colchicums right by the front door that bloom late September or October. But the stars of the fall are really the trees themselves as they turn the whole spectrum of colors, gradually dropping their leaves and allowing the milder winter sun to warm our solar house.

Maintenance of this shade garden is heavy in the spring when we really want to be outdoors. Watching for the newest seedlings to crop up in surprising places is high adventure. Although there is no crabgrass, chickweed abounds and hand weeding is the only way. But all this back-bending,

muscle-building activity takes place before it is too hot. *Corydalis lutea*, and *C. cheilanthifolia*, forget-me-nots and johnny jump-ups appear in the walkways and in different spots each year. We don't think them out of place but leave them. By mid-June we use the weed wacker to cut back the raggedy may apples and skunk cabbage. By June's end the tree leaf cover is heavy and the naturally drier summer climate slows down the exuberant spring growth and our plants, and we slip together into a more languid summer mode.

We are away from our garden at least eight weeks out of each year and sometimes more than that, spending three weeks in August in our New Hampshire mountain house. When we are at home, two to three days of intense gardening (deadheading, weeding and whacking, mowing the streamside field) has kept our woodland shade garden in bounds. We mulch the herb-vegetable terrace and the propagating beds heavily. We use floating row covers on some vegetables. This keeps down bugs

as well as providing summer shade. We have a wonderful housesitter who comes to water the container plants and keep an eye on all that's here.

Gardening on the shady side has worked well for us. The views from our deck balconies changes daily. No grass and all garden: great. (Yes, we do now have that mowed-once-a-month grandchildren's playing field.) We experiment with new ideas for different combinations and contrasts every year. At present we are studying shady grasses for the woods and sunny grasses to be reflected in the water of the stream.

We urge others to try a natural garden. The potential is limitless. You design the plant combinations suited to your special site. It's a creative process; an art form of the earth.

Toni Brinton is an enthusiastic dirt gardener in Chadds Ford and chair of John Bartram Association.

G R O W I N G I N T E R E S T S

Scilla autumnalis

by Toni Brinton

32

This small fall-blooming bulb, the starry hyacinth, is perfect for a dooryard garden, the rock garden, or massed in an area where it will be seen and enjoyed each day, and where it will not be overrun by other more aggressive plants.

I have never seen this bulb offered for sale but I grew it from seed from the American Rock Garden Society Seed Exchange. It likes me well enough to be self-sowing now. It takes two to three years from seed to bloom, and comes into bloom around the end of August or the first of September. It endures, if it isn't very hot or very humid, for about three to four weeks. It sets plenty of seed and also increases by bulblets. It is 6 to 8 in. tall. The clear, medium-green leaves appear in May and are about 8 in. long and no more than 1/2 in. wide. Sometimes the leaves almost disappear, but then the flower spike, around which tiny light purple flowers with light purple anthers circle, rises firmly at the end of August. Often, there is a new flush of green leaves that surrounds the flower stem.



photo by Toni Brinton

This is indeed a small bulb. Yet I have it scattered through my rock garden, by the front door and then in a 2-ft. by 3-ft. mass in my deck garden. Because it comes at a

time when bloom is scarce and requires very little care, I urge other growers to try this little-known *Scilla*. It will give you great pleasure.

Gypsum

The refresher course in soil by Jeff Jabco is essential groundwork for all kinds of gardening (July, *Green Scene*). We need to be constantly reminded that understanding the physical characteristics of soil is fundamental to attaining good plant growth.

An additional aspect of this understanding is appreciation of the value of gypsum as an additive for clay soils or poorly drained areas where ground is apt to have become too compact. Calcium sulfate (gypsum) has an exceptional capability to improve earth in such circumstances. It is a much easier way to alter the soil's texture than by laboriously working in the large amounts of compost that would be needed.

Clay is packed and devoid of air, a condition that resists root expansion and by prolonged water retention can drown whatever roots do develop. This is largely because of the build up of excess sodium. The gypsum chemically and physically alters this condition by exchanging calcium for sodium ions so that the clay agglutinates into expanded porous clumps allowing spaces between for aeration and water

drainage. This change is more or less permanent and has no effect on other soil qualities. It does not preclude the use of additional compost or chemical fertilizer. Repeat the application of gypsum, at a rate of 50 pounds/1000 square feet, annually in the fall for three years. Skip a year, and if the soil is still not friable enough, continue for another two years. Actually I used it over a period of 13 years without any evident problems.

If in some area in a vegetable garden for certain root crops the soil seems too loose, discontinue it in that area. Low spots in a lawn can benefit by this treatment too. The gypsum will work its way down by natural means of rain and earthworm action to a depth of six inches. Calcium is missing in a good many fertilizers and the small amount of free calcium provided can be a plus.

A comment on grass fertilizing: when using a fertilizer in the fall, slow release or not, get the one in which phosphorus (the middle number) is twice the amount of the two end numbers, or approximately so, e.g. 10-20-10. Top growth will not be as great

but root development will be encouraged. So in August when many lawns show the browning from reduced rain, the deep roots will maintain the appearance of the top structure longer and the grass will recover more rapidly when it does rain.

L. Wilbur Zimmerman
Bryn Mawr, Pa.

The Plantfinder

A free service for *Green Scene* readers.

If you can't locate a much wanted plant, send your name and address (include ZIP), the botanical and common name of the plant to Plant Finder, *Green Scene*, PHS, 325 Walnut St., Philadelphia, PA 19106.

WANTED

Paeonia 'Ivory Jewel.' Contact Michael Martin Mills, 632 Burnham Road, Philadelphia, PA 19119.



An Invitation to Plant Societies

SEND US YOUR PLANS FOR 1992

We will publish information about one major plant sale and one major event for each area plant society based in the Delaware Valley from January 1, 1992 through December 1992. Send the information to Carol Lukens (*Green Scene*, 325 Walnut St., Phila., PA 19106.)

Deadline: October 1, 1991. Please use the following format:

NAME OF CHAPTER AND SOCIETY: _____		
	Event #1 — Major Event	Event #2 — Plant Sale
Name of Event	_____	_____
Dates	_____	_____
Time	_____	_____
Location	_____	_____
(full address)	_____	_____
	_____	_____
Fee, if any	_____	_____
Contact person	_____	_____
Address	_____	_____
	_____	_____
Phone Number	_____	_____

Outdoor Furniture Specialists Hill Co.

Create an exciting outdoor living area with a visit to the Hill Co. Distinguished collection of outdoor furniture and accessories, wicker, and rattan. Showrooms fully stocked year round.

(215) 247-7600

8615 Germantown Ave.
Chestnut Hill

LARGEST SELECTION OF RHODODENDRONS & AZALEAS

on the East Coast with many new varieties. Also Kalmia, Pieris, and many companion plants. Mail order catalog, \$2. **ROSLYN NURSERY**, Dept. GS, Box 69, Roslyn, NY 11576.

FALL IS FOR PLANTING

Shrubs for Naturalizing

Buttonball Shrub, Summersweet, Enkianthus, Fothergilla, Bayberry, Witch Hazel, Styrax and colorful Butterfly bushes.

Unusual Ornamentals

Weeping Siberian Pea and Katsura Tree
Harry Lauder's Walking Stick. Heathers,
Dwarf Conifers, other hard-to-find items.

Wildflowers, herbs and perennials

Our own Arbutus, Butterfly weed, Cardinal flower, fragrant olive, fall-blooming clematis.

Large bayleaf special: \$4.99.

MANY HARVEST SPECIALS

Indian corn with herbal bouquet
Bittersweet Bouquets, Wreaths, Plants
Herbal wreaths and bouquets

Triple Oaks Nursery and Florist

Route 47 Delsea Drive
Franklinville, NJ 08322
609-694-4272

OPEN 7 DAYS

Less than 45 minutes from Center City Philadelphia. Walt Whitman Bridge to Rte 42; Rt 55 to Exit 43. Left to Rte 47; Right on 47 1 1/2 miles.

END OF SUMMER SALE WHOLESALE and RETAIL

10% or volume discount — whichever you prefer

Spreading Yew, 4-5'
Beautifully sheared White Pine, 4-9'
Pyramidal Yew, 4-8'
Colorado Spruce, 4-8'
Arborvitae, 4-7'

Call for an appointment and/or more information
And just a reminder about our PRIZE WINNING CHRISTMAS TREES. Cut, B & B, wholesale and retail. Good selection of Douglas Fir, Colorado Spruce, White Pine, and limited number of Fraser Fir.

In Sept., families come to the farm to select their live (B & B) Christmas trees for pick-up near the Holidays. After Thanksgiving is the time to visit our choose & cut fields for your SHANAHAN GROWN CHRISTMAS TREE. Our repeat customers say "Why go elsewhere?"

SHANAHAN'S TREE FARMS and NURSERIES

R.D. #2, Box 73 B
Honey Brook, Pa. 19344
(215) 273-3318

AFRICAN VIOLETS & GESNERIADS

America's Finest — WRITE for 1991 catalog and tips, 50¢. VISIT our lovely greenhouses. FISCHER GREENHOUSES, Poplar Ave., Linwood, NJ 08221 (609) 927-3399. Open daily, incl. Sunday.

PRESERVED PARADISE — 93 acres, woods & fields, 800 ft Southface Bluff. Stone House. Barn, Sum. Kit, Spring House, Oven, Carriage House, Pond. Liveable. Needs restoring. Secluded on a 3+ mi. dirt rd. 50 mins K of P. **\$525,000 neg.** **GLOCKER CO, Inc.** Kathie Rosse' (215) 367-2058.

Consider the Winter Garden

The outdoor room is as much architecture as it is garden. The courtyard is the most familiar and oldest type of outdoor room. Today, however, the garden is often separate, like an annex to interior living space. The **Garden Architecture Group** builds aesthetic frameworks for the garden that form a total living space where house and garden merge... Trellis, pergolas, columns, arches, antique urns, gates and other architectural elements. **Brian Foster (215) 627-5552.**

DISTINCTIVE PENNSYLVANIA GROWN PLANTS

for gardening and landscaping. Many scarce, unusual and useful selections along with hardy natives available. Call or write for FREE catalog.

APPALACHIAN GARDENS

P.O. Box 82
Waynesboro, PA 17268-0082
(717) 762-4312

AFRICAN VIOLETS

100 varieties, standard, micromini, miniature, trailers, variegated types. Greenhouses open daily. Cultural book, \$6.95 ppd. Color catalog 50¢. **TINARI GREENHOUSES**, 2325 Valley Road, Huntingdon Valley, PA 19006 (215) 947-0144

DISCOVER YOUR HIDDEN GARDEN

Low-voltage lighting systems for your garden, deck, patio, pool, spa or greenhouse.

- safe, reasonably priced and economical to operate
 - installation does not disrupt existing plantings
- Call (215) 376-1181 or 374-2036 for a no-obligation consultation and price estimate.

THE LANDSCAPE LIGHTING COMPANY

AMERICAN GREENHOUSE SYSTEMS

- Maintenance on ALL greenhouses — IBG, Janco, L&B, Rough, National, etc.
 - Refurbishing older greenhouses
 - Sales of Poly, Lexan and Glass Enclosures
 - Redwood and Aluminum Solariums and Conservatories
 - Yearly Maintenance Contracts
- P.O. Box 817 Malaga New Jersey 08328
(609) 694-3500 FAX (609) 694-1840
(800) 676-3505

JAMES FARR LANDSCAPE CONSTRUCTION

- Planting and masonry design/installation
- Pools, waterfalls, drainage systems, Japanese gardens, traditional/contemporary gardens, etc.

(215) 884-1720

PLANT SALE

Featuring Plants Not Readily Available
Henry Foundation for Botanical Research, 801 Stony Lane, Gladwyne, PA 19035 Phone (215) 525-2037.

Members: Friday, Oct. 4
Non-members: Saturday, Oct. 5
9 am to 4:30 pm

ARCHITECTURE, SITE PLANNING GARDEN DESIGN

Todd R. Phillippi, AIA

Complete commercial and residential design services.

1325 Old Lincoln Hwy., Langhorne, PA 19047
(215) 750-8770

LIGHTING BY FILLMAN

Specializing in

LANDSCAPE • GARDEN • DECORATIVE
Lighting

DESIGN • INSTALLATION • SERVICE
Also — Patios • Decks • Driveways • Walks
G. LYNN FILLMAN (215) 766-7645

DEER PROOF PLANTS

HAVE BEAUTIFUL LANDSCAPES
AND YOUR WILDLIFE, TOO

We grow plants resistant to damage by deer. Now your landscapes can be varied, beautiful, and you can live with the Deer, too!

CONTACT US

HILDEBRANT NURSERIES

OLDWICK NJ
"ESTABLISHED 1923"
908-439-2256

THE CLASSIC LOOK OF A GARDEN

Designed for today's lifestyle.

Plantings, Rock and Boulder Work, Artificial Ledges and Waterfalls. Designed, installed and warranted exclusively by E.G. WITOMSKI CO.
Since 1976.

Inquire (215) 565-8826

GORDON EADIE

LANDSCAPE ASSOCIATES, INC.
LANDSCAPE & CONSTRUCTION
VALLEY FORGE, PA
(215) 933-4410

EVERY DAY IS EARTH DAY WITH US

SENSITIVITY TO
ECOLOGICAL PROBLEM AREAS

Philadelphia Flower Show Exhibitor — Awards every year. 36 acres of plant material — specimen and landscape quality. Five designers on staff to develop customized landscapes. Efficient, experience landscape, construction, masonry crews.

WE CULTIVATE PERSONAL SERVICE

REED'S WOODS

QUALITY WORK AT A FAIR PRICE

Springhouse Restorations
Additions/Renovations
Decks, Flagstone, Brickwork
Carpentry & Landscape Structures
Call for Free Estimate
76-A Bodine Road
Malvern, PA 19355
(215) 827-9663

WOODLANDERS

RARELY OFFERED DIXIE NATIVES AND INTRODUCTIONS, woody herbaceous, all nursery-grown. Many hardy northward. Send \$1.00 for mail-order list.

WOODLANDERS GS,

1128 Colleton Ave., Aiken, SC 29801.

WEeping ENGLISH YEW — PAIR MATURE SPECIMENS, 5/5 1/2", B&B

Perfect to frame an entry or vista.
We will deliver, plant & mulch.
(215) 255-0176

AUTHENTIC COLONIAL & VICTORIAN FENCE REPRODUCTIONS
Fine-crafted fence pickets, gates, posts, arbors.
Also, classic New England fence styles.
Custom designs available.

For information:
The Heritage Fence Company
P.O. Box 121
Skippack, Pennsylvania 19474
(215) 584-6710

LOUISE CARTER • GARDEN DESIGN
Specializing in residential garden design:
Design and Horticultural Consultations
Plans and Installation of New Gardens
Renovation of Older Gardens
Fifteen years experience in the Philadelphia
and Washington areas — (215) 687-5192

**CONTEMPORARY STRUCTURES
FOR HOME AND GARDEN**
At last! Great new designs for those garden
necessities. Arbors, Trellises & Gates, built in
steel to last. Write or call for catalog.
The Painted Garden, Inc.
304 Edge Hill Road
Glenside, PA 19038
(215) 884-7378

**CREATE A NEW GARDEN
THIS YEAR AND ENHANCE
THE BEAUTY OF YOUR HOME**
Specializing in:

- * Naturalistic Landscapes
- * Perennial Gardens
- * Native/Wildflower Plantings

Consultation/Design/Installation
JERRY FRITZ GARDEN DESIGN
431 West Walnut Street
North Wales, PA 19454
(215) 699-5083

**LINDA CORSON
LANDSCAPE DESIGN**

- Consulting
 - Plans
 - Supervision
- Member ASLA
Registered Landscape Architect
215-247-5619

COX & CO., INC.
Tree and Landscape Services.
Tree preservation, planting, removals.
(215) 687-1780
Nursery: 15 Airport Rd., Limerick, Pa 19468

David Brothers
BEAN ROAD NURSERY
Landscape Architects, Builders
and Nurserymen
Providing the Fine Art of Garden Construction
and Landscape Restoration
QUALITY SERVICE WITH COURTESY
AND RELIABILITY
EDGAR and KIM DAVID
247-2992 584-1550

**GRACIE'S
NEW AGE EATERY
& 21ST CENTURY CAFE**
Healthy Food in a Nourishing Environment
Reservations now accepted for:
Private, intimate parties
Small weddings
Luncheons for groups by appointment
MANATAWNY ROAD, PINE FORGE, PA 19548
(215) 323-4004 Wednesday through Saturday

ROBERT W. MONTGOMERY LANDSCAPE NURSERY, welcomes you to visit our 20-acre nursery, located on a restored Chester County farm in lovely Chester Springs, Pa. Our full-service landscape nursery can fill all your gardening and outdoor living needs with 25 fulltime horticulturists on staff. Growers of over 1,000 varieties of perennials in mature sizes to complement the established landscape.
Patio Furniture Shop • Greenhouses
4 acres Nursery Stock • Landscape Materials
Garden Shop • Seasonal Christmas Shop

Ask for listing of Fall Events
Professional Landscape Design
and Installation
Call Now for Design Consultation
We contract landscape installations
12 months a year

Best in Show
1991 Philadelphia Flower Show
P.F.S. BEST IN SHOW 1990, 1989, 1984, 1982
SILVER TROPHY 1986
MAJOR AWARD WINNER 1989, 1988, 1987
**ROBERT W. MONTGOMERY
LANDSCAPE NURSERY**
Our Only Location:
Route 113, Chester Springs, PA
363-2477
Open 7 Days a Week

MEADOWBROOK FARM
1633 Washington Lane
Meadowbrook, PA 19046
887-5900 Mon-Sat 10-5
AN ENCHANTING EXPERIENCE
awaits you in our gardens and greenhouses. Choose from lovely geraniums, beautiful annuals, thousands of perennials and flowering and evergreen shrubs that are perfect for sunny, shaded or groundcover areas. Accent your garden with rare plants, topiaries, fountains, statuary or beautifully planted patio pots. Unique gifts and baskets of blooming plants are our specialty.

For The Better Things In Gardening
MEADOWBROOK FARM

**EXPERIENCE AUTUMN
AT WATERLOO GARDENS**
New! Spectacular Animated Display
"The Magical Path to Halloween"
Fall for Planting at Our
50-Acre Nursery:
Support President Bush: Plant a shade tree!
• Award-Winning Landscape Design
to suit your personal lifestyle.
• Over 100 varieties of Tulips,
including our own 'exclusive imports.'
• "Estate Collection" Tulips & Daffodils
• Over 75 varieties of Chrysanthemums
• Over 150 cultivars of Daylilies
• Over 60 cultivars of Iris
• Rare Specimen Plants
• Orchids • Bonsai • Topiaries
• Bird Feeders • Bird Houses • Bird Seed
• Exquisite Gift & Gourmet Shops

Call for a brochure on horticultural
seminars & floral design classes!
OCTOBER IS COLLECTABLE MONTH at
— Waterloo Gardens —
Two Locations — Open 7 Days a Week
Exton — 200 N. Whitford Rd. (215) 363-0800
Devon — 136 Lancaster Ave. (215) 293-0800

GARDEN DESIGN — Design and installation of specialty gardens including perennial borders, herb, kitchen and English cottage gardens.
CAROL MANICONE (215) 348-4830.

Plants for Sale
• *Sciadopitys verticillata* — approx 18-20 ft., \$4,500
• *Acer palmatum dissectum 'atropurpureum'* 10-12 ft., \$3,200
18-20 ft., \$4,800
Many other plants available!
James Farr
(215) 884-1720

**GREENHOUSE CONSTRUCTION
Sales and Service**
Janco, Lord & Burnham and more.
Call Robert J. LaRouche at
Glass Enclosures Unlimited
228 Poplar Avenue
Wayne, PA 19087
(215) 687-2444

**THINK YOU KNOW
HOW TO GROW TOMATOES?**
For the highest tomato yields ever, the earliest red tomatoes, Read my book — *100 Pounds of Tomatoes Out of an Inexpensive Foam Box*. You'll be shocked at what you see. Send \$10.95 to Leopold Klein, P.O. Box 1237, Valley Stream, NY 11582.

PENNSYLVANIA'S BEST
Oak Bark Mulch — Dark, Fine Shredded. Picked up or delivered in bulk. Mushroom Soil & Topsoil also available.
(215) 483-8922 (215) 482-1711

The Philadelphia Flower Show.
Landscape Design and Planning.
Installation and Renovation.
For the Country Garden
Herbs from the Finest Growers
Over 100 Varieties
The Best Plants Featuring
The Styer Award Winners
Garden Accessories and Necessities
Lead Stone Terra-Cotta
Tools to Last a Lifetime
Water Gardening Pool Supplies Books
Bonsai Tools Pottery Plants
Shade Color Fragrance
Experience the Pleasure of Gardening
J. Franklin Styer Nurseries
Since 1890
Celebrating 100 Years in Horticulture
Open Seven Days A Week
459-2400

**THE UNIQUE BEAUTY OF
ORNAMENTAL TREES**
Dealers and locators of large, mature standard and rare plant material, including arboretum-quality specimens, serving landscape architects, designers, contractors, and private individuals.

Our services also include:
• planting and transplanting of large trees
• assessing and renovating mature collection and estate gardens
• we will purchase large trees.

TREE TRANSFERS INC.
(215) 635-2310

**BIENNIAL PLANT SALE
ASSOCIATES OF THE SCOTT ARBORETUM**
Saturday: Sept. 14
10 am to 3 pm

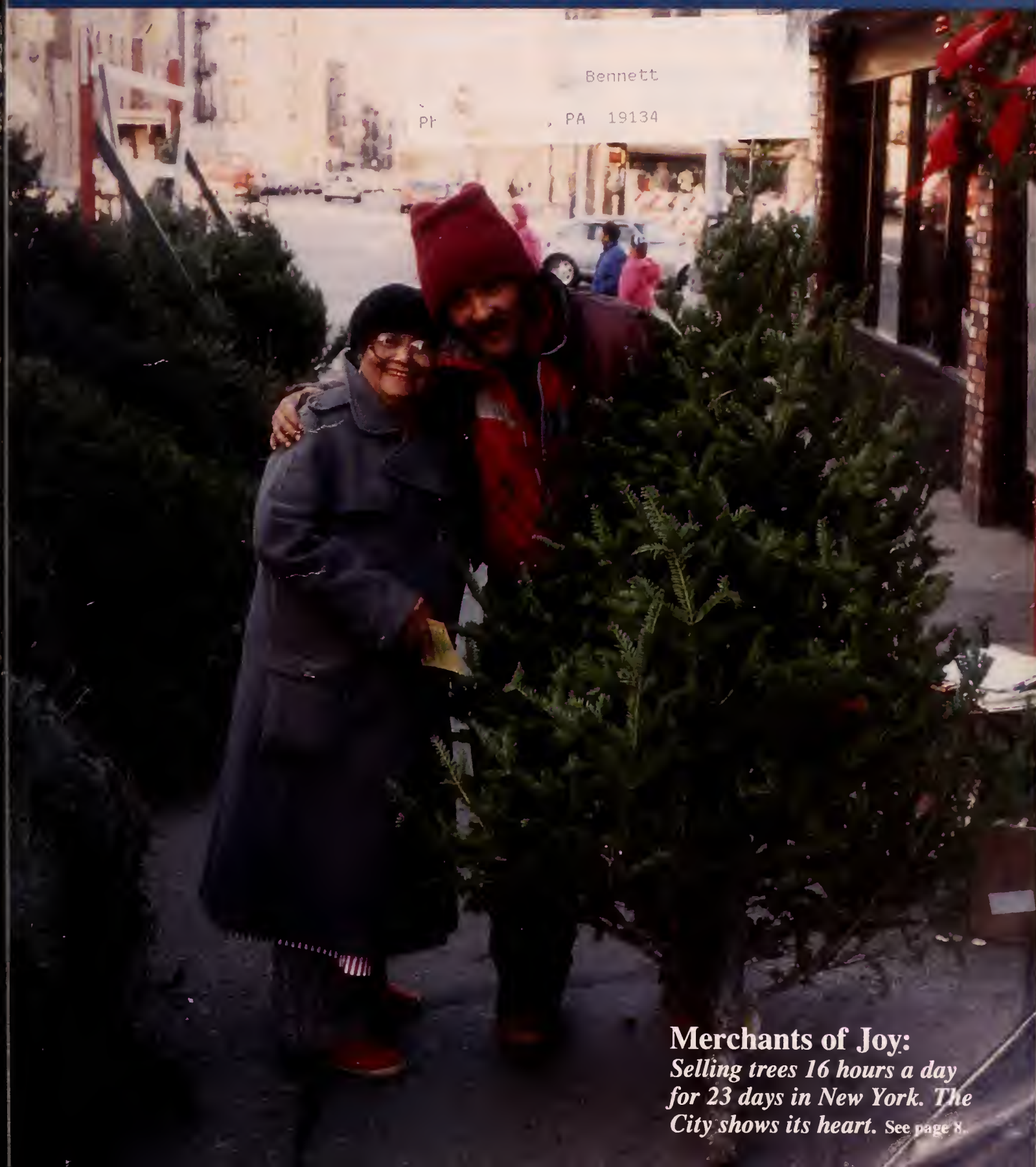
Featuring more exceptional trees, shrubs and perennials for Delaware Valley gardens than ever before. Unusual houseplants for the indoor gardener and a collection of gardening books also available. **Experts will be on hand throughout the day to answer plant questions.** Located on College Avenue off Route 320 in Swarthmore. For more information: (215) 328-8025.



The autumn stars of the shady garden are the trees down the ravine that radiate a soft golden glow throughout the area. When the leaves fall, the sun's light warms the solar house atop the ravine. See page 28.

GREEN SCENE

THE MAGAZINE OF THE PENNSYLVANIA HORTICULTURAL SOCIETY • NOV./DEC. 1991 • \$2.00



Merchants of Joy:
*Selling trees 16 hours a day
for 23 days in New York. The
City shows its heart. See page 8.*



in this issue

3. Bats and Balsam on Broadway

Jean Byrne

4. Richard Both's South African Garden

Bonnie Swan

8. Merchants of Joy: Selling Christmas Trees in the Big Apple

George Nash

13. Clay in the Garden

Lydia Leavitt

16. Creating a Wildlife Refuge On Your Property

Priscilla Y. Huff

22. The Fickle Gardener

Barbara Bruno

27. Experiment with Stonescaping

Marie D. Hageman

30. Letters to the Editor

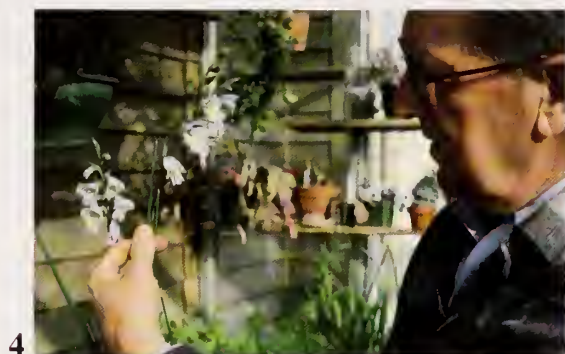
31. A Plan for Every Garden

Kathleen Mills

32. A Garden for Miss Franklin

Carol Fletcher Daniels

33. Classified Advertising



Front Cover:

Carlos Furlong celebrates with a satisfied customer who has just bought a Nova Scotia Balsam. See page 8.

Front Cover: photo by George Nash

Back Cover: photo by Barbara Bruno

Volume 20, Number 2 November/December 1991

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Monday through Friday 9:30am to 12 Noon (Hotline is closed in December)

Donald L. Felley / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

Joseph P. Robinson / *Editorial Assistant*

Carol C. Lukens / *Editorial Assistant*

PUBLICATIONS COMMITTEE:

Judy Foley / *Chair*

Anne S. Cunningham / *Vice-Chair*

Kathryn S. Andersen

Walter G. Chandoha

Charles W. Heuser

Gene Jackson

Anthony A. Lyle

Robert McCracken Peck

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendells' Graphic

Membership Information: Linda Davis, 625-8265

Printer: Howard Printing

The GREEN SCENE, (USPS 955580), Volume 20, No. 2, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$9.75—Single Copy: \$2.00. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1991

Green Scene subscriptions are part of the membership benefits for:

Botanical Garden at Asheville, North Carolina
Blithewold Gardens and Arboretum, Bristol, Rhode Island
Cox Arboretum, Dayton, Ohio

Frelinghuysen Arboretum, Morristown, New Jersey
Hershey Gardens of Hershey, Pennsylvania
Maryland Horticultural Society, Baltimore, Maryland
Pennsylvania Horticultural Society, Philadelphia, Pennsylvania
Phipps Friends, Pittsburgh, Pennsylvania
Staten Island Botanical Garden, Inc., New York

BATS & BALSAM ON BROADWAY

 by Jean Byrne

Recently while I was visiting friends on the outskirts of a small town, they invited me to go out after dinner to watch the bats come out from under the roof's eaves to whirl and pitch around at the edge of the woods. The performance was short, and I missed it because I stopped to dry my hands before going out. Different strokes for different folks.

Recently, I came up against bats again when a friend and I agreed to sit for her absent daughter's menagerie in Beltsville, Maryland: two dogs, a corn snake and two bats (in a cage, of course). When we arrived, we mistakenly ate the bat's dinner: some melon, dates and some happily unidentified other morsels. Fortunately, when we read the instructions for the care and feeding at the zoo, we found there was a plentiful replacement supply.

Being a city person, I'm well-versed on the lore of vampires, but bats confound me. So I was fascinated when Priscilla Huff sent us her article about how to create a wildlife refuge in any size garden and included a suggestion for building a bat house. Imagine, right on your property — inviting them in.

★ ★ ★ ★ ★

We've gone far afield in this issue, from a story about saving the wildlife to stories that touch on South Africa and Vermont. Bonnie Swan talked with Richard Both of Delaware whose beautiful South African bulb entries in the horticultural section of the Philadelphia Flower Show have drawn strong interest; she's written here about this dedicated collector, whose interest in these bulbs grew during business trips to South Africa back in the 1950s.

We first came across George Nash's story of hauling Christmas trees from Vermont to New York in *Harrowsmith's Country Life* over a year ago. It was such an exuberant and jaunty story, we just had to talk to Nash. He agreed to write a story for *Green Scene* about his experiences on the road and in New York, which he did before he followed his wife out to Arizona where she began her family practice residency at



a hospital in Falstaff. When we called him in Arizona as we were getting ready for this issue, I asked George how he was adjusting to life there; he said just fine. He was bicycling, reading and had just completed a book *Renovating Old Houses* for Taunton Press. Would he miss hauling Christmas trees this year? Nope — he'll be back "for a return engagement with Balsams on Broadway this Christmas."

★ ★ ★ ★ ★

A big welcome back to Kathleen Mills, who returns to the Pennsylvania Horticultural Society as a horticulturist, and to *Green Scene* as a columnist. In this issue she invites you to join PHS for a garden design competition; you have almost a year to plan and plot for it.




Richard Both's South

South African plants grow in a landscape different from our own. There the land is defined by mountainous waterfalls, velds, soggy vleis, and sun-baked koppies. High summer is January, winter is July. Many of the plants that grow there naturally are known to us only through botanic gardens and conservatories; others can be grown in our own gardens and greenhouses. Their common names, like those of their habitats, are foreign, too: brown afrikaner, geelviooltjie.

Some of these plants have been transplanted to the Wilmington, Delaware, greenhouse of Richard Both, who delights in South African wildflowers from the winter rainfall regions of the country. Both has been growing winter-blooming gladioli, clivia, and lachenalia (cape cowslip) for years with spectacular results. Anyone who follows the competition in the Horticult of the Philadelphia Flower Show has probably seen his *Gladiolus tristis* and *Lachenalia aloides aurea* take first prizes in their classes.

Both grows South African wildflowers for the same reasons that people specialize in any pursuit. "They are different, and no one else is growing them, so it's a niche for me," he explains. Inherent in that difference is the challenge of growing relatively unknown plants, and the satisfaction of bringing the unknown from seed to flower and to seed again. Sources of the plants are hard to find, and tracking them down is part of the fun for him. Both also believes that he has a mission to inform and inspire other gardeners to try growing them. Exhibiting the plants in the Flower Show satisfies that mission, and gives him the opportunity to compete.

A chemist by training, and a gardener by choice, Both gardened outdoors whenever he could in the course of his career with Hercules' Explosives and Agricultural Chemicals Department. He planted a victory garden during World War II, and managed to have a garden while he lived in Chicago in the '50s, even though it meant



Gladiolus scullyi. The flowers are blue at the tips of the petals and yellow inside. The plant is native to the drier regions of South Africa's Western Cape.



Richard Both shows the *Gladiolus gracilis latifolius*. In bloom for the first time in Both's greenhouse in 1991, the pale blue flowers of this variety are slightly fragrant. The flower stalk is quite flexible, and needs support to show the flowers to their best advantage.

African Garden

 by Bonnie Swan

driving out to the country to get a bucket of decent soil. In fact, working for Hercules helped to further his interest in gardening. As a sales representative for the international division of agricultural chemicals, Both travelled all over Europe, South America, and South Africa. In his travels he made several contacts that later stood him in good stead when he began to grow South African wildflowers.

Both's first contact with South African wildflowers was the familiar clivia (*Clivia miniata*), given to him by a friend. Once Both learned of the existence of the yellow-flowered clivia, he set out to get that plant. The first seed that he acquired produced unsatisfactory, whitish-yellow flowers. He persisted in his search, and a friend put him in touch with clivia expert Kingsley Hamlyn. After corresponding with Hamlyn, Both visited him in Natal in 1952. There Both saw yellow, white, and red-flowered clivia in their native habitat, growing in bright light under a high canopy of trees. From Hamlyn he acquired seed that developed into a plant with clear yellow flowers.

In the course of his search for a yellow-flowered variety, Both discovered the variegated clivia he now grows. An article in *The Garden, Journal of the Royal Horticultural Society*, sparked his interest in a variety grown by the Demeter nursery in Belgium. While in Belgium on business, Both visited the nursery. Both remembers "Mr. Demeter knew all about Delaware. He wanted to know if there were any Mohicans there because he had just seen the movie, 'The Last of the Mohicans'." Though Both was unable to satisfy his curiosity about the Indians, Demeter gave Both the variegated clivia.

This particular variegated clivia, whose dark green leaves are boldly striped with yellow, is the only one of its kind in the United States. The original plant was an offshoot that Demeter's grandfather discovered by chance. The Belgium nursery had been growing the variegated clivia for more than 100 years, during which time

continued



Gladiolus 'Christabel' (*G. tristis* x *G. virescens*). 'Christabel' was developed by the late Dr. T. T. Barnard, a 20th century English gladiolus breeder. Some winter-blooming gladioli are hardy in the milder British climate.

they had only been able to propagate about 200 plants. Both has never been able to propagate his plant.

indoor gardening adventures

Both's indoor gardening adventures began in earnest early in the 1960s, when a Wilmington neighbor introduced him to orchids and other non-hardy plants. Not surprisingly, when the Boths built a new home, a greenhouse was part of the plan. To spare the expense of heating, Both decided to concentrate on plants that could thrive in a cool greenhouse. He grew plants that would beautify his home: orchids, begonias, freesia, clivia, shrimp plants (*Justicia* sp.), and hibiscus.

After his retirement in 1976, Both stayed in touch with his South African friends. When they learned what he was growing in his cool greenhouse, they encouraged him to try winter-blooming gladioli. There was one obstacle, however. It was difficult to import the plants' corms, and there were no easily tapped sources of seed. His search for seed involved lengthy correspondence with South African horticulturists, and poring over *The Winter-growing Gladioli of South Africa* the way most gardeners study seed catalogs. The South African plantsman J.W. Loubser was particularly helpful, advising Both and putting him in touch with potential sources of gladiolus seed.

"Through my correspondence with people who knew the plants, I finally began to realize how beautiful these gladioli were," Both recalls. "They are fragrant, and they are different than anything else I have seen. That's when I started growing a lot of different ones, then found out from other people where else the gladioli were being grown."

Both's search brought him in touch with a variety of sources: the arboretum at the University of California, Irvine; the American Plant Life Society; the Indigenous Bulb Growers of South Africa, and others. Today, he grows more than a dozen varieties of winter-blooming gladioli and related plants, whose flowers range in color from white, to blue, to vivid orange-red. He has shown two of them in the Philadelphia Flower Show: *Gladiolus tristis*, a fragrant species with pale yellow flowers; and *Gladiolus* 'Christabel,' an interspecific hybrid with fragrant yellow flowers.

Unlike the summer-blooming gladioli, Both's species are slender, delicate plants with flexible, grass-like leaves that grow up to 2 ft. in height. The flowers are rarely more than 2 in. in diameter, and some are quite fragrant. The period of bloom can be



Lachenalia aloides aurea. In a photograph taken one week before the plant was entered in the Philadelphia Flower Show, the flowers are just beginning to open. They are bright yellow in full bloom.

This particular variegated clivia, whose dark green leaves are boldly striped with yellow, is the only one of its kind in the United States. . . . The Belgium nursery had been growing the variegated clivia for more than 100 years, during which time they had only been able to propagate about 200 plants.

as long as two weeks as the flower buds open, one after another, on the spike.

expanding the collection

Both has recently expanded his South African collection to include the genus *Lachenalia*, a group of bulbous plants from a wide range of habitats in the winter rainfall region of South Africa. He discovered lachenalias while working his monthly stint on the Pennsylvania Horticultural Society Hotline. During a quiet moment on the Hotline, a magazine article caught his eye: "If you like gladiolus, try lachenalias." He learned that lachenalia are small and compact, requiring the same growing conditions as the winter-growing gladioli. That was enough to inspire him to try the plants. Naturally, lachenalia were no easier to procure than the gladioli had been, and Both embarked on another search for seeds or bulbs, using the *The Lachenalia Handbook* as his guide. Eventually he got in touch with a mail order firm in South Africa that could supply him with the bulbs.

Six lachenalia species now grow in Both's greenhouse. He has shown one at the Philadelphia Flower Show: *L. aloides aurea*, for which he has won numerous awards, including "Best of Show" in 1989. Lachenalias couldn't be less like the dainty gladioli in appearance. Most species produce only one pair of leaves. The flowers, which are small and tubular or bell-like in shape, are closely borne on spikes or racemes. They are usually white, yellow, or red in color.

One thing that the gladioli and lachenalia do have in common is their cultural requirements. They are not windowsill plants: they need cool, wet growing conditions in the winter, and a period of dormancy in the summer. Both believes that a greenhouse or an unheated sunporch whose temperature never goes below freezing is a necessity if the plants are to thrive and bloom. He can reproduce those conditions in his own greenhouse, a 10 ft. by 14 ft. structure, sited on the south side of his house.

"It has to be between 48° and 52°F during the night when the plants are growing," explains Both. "It can get warmer than that during the day, for relatively short periods of time, going up to about 60° or 70°. That is typical of the climate in South Africa in which the plants grow. It's wet and cold at night, never freezing, and then it warms up a little during the day." In the summer, the weather is hot and dry for a long time. Both approximates the summer conditions by leaving the dormant bulbs and corms in their pots under the greenhouse benches for 60 to 90 days, where temperatures daily soar up to 100°.

a cultural challenge

Both has has South African cultural regimen down pat. The biggest challenge now is timing the plantings in his small greenhouse, for he plans his growing around the dates of the Flower Show. The gladioli vary in the amount of time that it takes to come into bloom, as do the lachenalia. The type of weather that we have in the winter can affect the timing as well. A few warm weeks in December or January can speed up the plant's growth and shorten the season considerably.

In the past, Both has compensated for not knowing the length of the growing cycle by starting lots of plants, and staggering their planting times. He's keeping better records now, and those records have enabled him to identify the growing cycle of each plant. The gladioli can take anywhere from 9 to 14 weeks to come into bloom; the lachenalias' cycle is 18 to 20 weeks.

Though he enjoys the competition, and the status of showing plants that few people grow, one of Both's reasons for entering his plants in the Flower Show is his honest desire to share beautiful and unusual plants. "I guess the Flower Show is the best way to educate people about these plants. That's where the most people would see them. I want the reaction to be 'That's great! That gives me an idea for something I can do.'"

There is another reason that Both grows



The greenhouse is only one part of Richard Both's garden. A perennial bed that extends the width of his property takes up much of his summer gardening time. He grows begonias, orchids and other plants for the house, as well as a species of *Veltheimia*, a bulbous South African wildflower, under lights in his basement.

South African wildflowers. "Almost everything I grow I try to grow from seed. To watch a plant grow through its full stages, to see it come into all of the glory of its bloom, and then to recreate itself is just magnificent." For Both, it is an affirmation of life itself, and his deeply held faith in God.

RICHARD BOTH'S PLANT LIST

Gladiolus and related plants:

G. alatus
G. carneus
G. 'Christabel'
G. x citrinus
G. floribundus ssp. *miniatus*
G. gracilis var. *latifolius*
G. liliaceus
G. orchidiflorus
G. scullyi
G. tristis
G. undulatus
G. uysiae
Homoglossum watsonium

Lachenalia:

L. aloides var. *aurea*
L. arbuthnotiae
L. contaminata
L. pallida
L. reflexa
L. unifolia

INDOOR CULTURE OF GLADIOLUS AND LACHENALIA

General Requirements

Soil and Fertilizer:

1/3 soilless mix, 1/3 coarse sand, 1/3 compost; fertilize with 1/2 strength 20-20-20, weekly after leaves show above surface, until January.

Planting:

For bloom in late February and early March, plant corms two inches deep in a clay pot. For the best display, plant about 14 corms in a 7- or 8-inch pot.

Light:

Bright

Water:

Keep on the dry side until leaves show above the surface, then keep moist.

Temperature:

Night, 45-50°F; day, 65-70°F

Dormancy:

After blooming, cut flower stalks and resume weekly feedings until leaves begin to yellow. Put pots on side, and allow soil to dry completely. Keep the pots hot and dry for at least 60 days, then dump the pots and separate the corms. Keep corms dry until fall, for planting.

SOURCES OF INFORMATION

The Winter-growing Gladioli of South Africa, G.R. Delpierre and N.M. duPlessis, Tafel-Uitgewers Beperk and Nasionale Boekhandel, 1973.

"The Lachenalia Handbook," *Annals of Kirstenbosch Botanic Gardens, Volume 17*, Graham Duncan, National Botanic Gardens, South Africa, 1988.

University of California
 Irvine Arboretum
 Irvine, CA 92711

Indigenous Bulb Growers
 Association of South Africa
 Box 141
 Woodstock 7915
 Republic of South Africa

The American Plant Life Society
 Box 985
 National City, CA 92050

Bonnie Swan is an environmental writer for the du Pont Company.



Selling Christmas Trees in the Big Apple

 by George Nash

From Vermont to New York, a Christmas tree caravan moves and settles through a month of activity that would tire an ambitious Bedouin.

“Hang tight little truck, I’m pulling up your backdoor,” the warning comes over by CB.

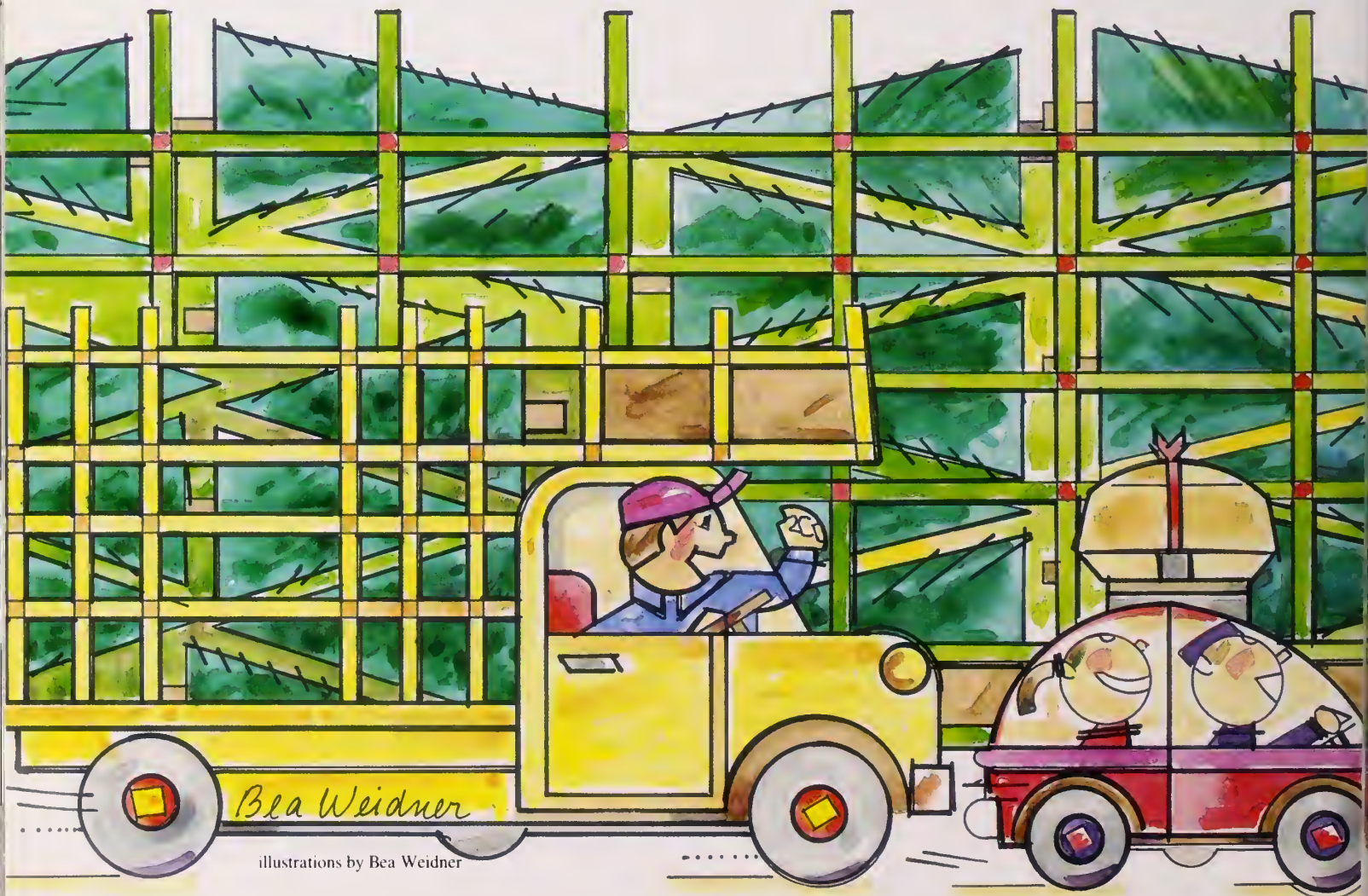
Southerners must carry a gene for long-distance truck driving. Still, that good ol’ boy accent seems incongruous in the hard clench of a northern Vermont night.

“Ten-four and thanks,” I send back. I tighten my double-handed grip on the steering wheel and crowd the shoulder. This Ford Ranger wasn’t intended to haul a travel trailer. It’s hard enough to keep it on the road without fighting an ambush of backwash whenever a tractor trailer ex-

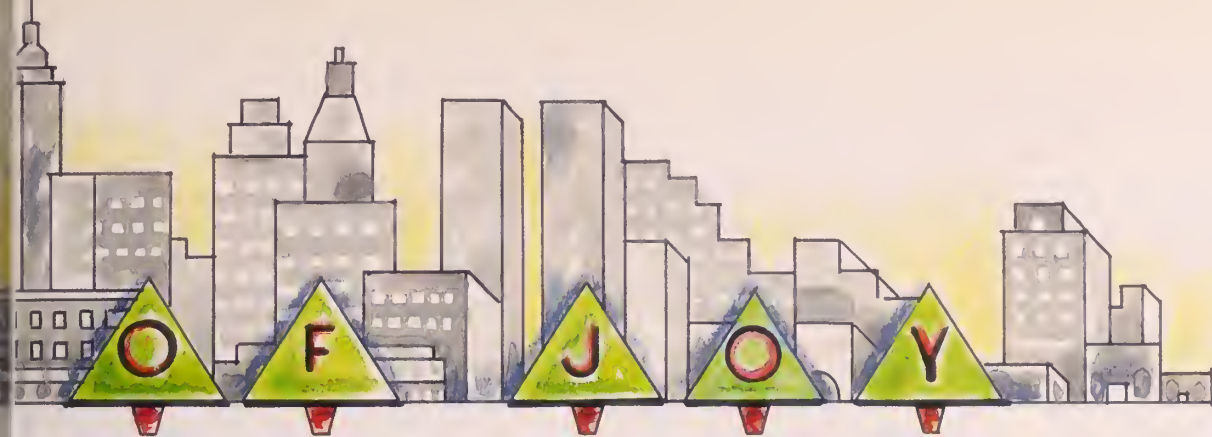
plodes out of the darkness behind me. Thank God, I-89 is clear of the usual late November squalls of snow, ice, and rain that up the adrenaline level of this annual voyage.

“Here comes a big one, Skinner,” I call to the swaying taillights ahead of me, as the rear end of my truck begins to dance to the shockwave of the passing semi. Skinner’s pickup is bigger, but so’s the travel trailer it’s pulling. If it wasn’t for the weight of the toolboxes in his truckbed, he’d be all over the road.

“Howdy, hotshot!” the trucker calls out



illustrations by Bea Weidner



as he overtakes the 30-ft. gooseneck trailer Bean's hauling with his souped-up four-wheel drive. Supplies and lumber are piled halfway up the 8-ft. high stakes that run the length of its bed. The trucker's lights swing to the right. He's passed my son, Seth, hauling the rest of the equipment and the biggest travel trailer with "Armstrong." A U-Haul rental truck in its previous life, the rugged old stake-body lacked modern luxuries such as power steering.

The CB draws, "Y'all part of some circus or what?" Looking at the dotted red line of our lights, crawling and falling with

the hills like a rollercoaster, I must admit, I'm bringing up the rear of a rather rag-tag caravan.

"Sorta," I reply. "We're heading down to New York City to sell Christmas trees."

* * *

A white board fence, suggesting horses grazing bucolic pastures, surrounds a half-acre of asphalt in the parking lot of a shopping center in the northeast Bronx. Tall red wooden posts support strings of multi-colored lights outlining the fence and leading to an arched gateway whose gilded

script invites shoppers into a "Christmas Forest." Inside, Seth and a helper fasten steel pins to the wood frames that will display the trees. With a special machine, he'll drill the butt of each tree and stand it upright on one of the pins. Meanwhile, another worker is decorating wreaths with pine cones, bows, and ornaments. Before long, people will be wandering among the boughs of a magic forest. A passing car eases along the fence, the window lowers, someone calls out above the chug of the generator and whine of power drills, "Yo! When the trees be here?"

continued



Gopher Broke Enterprises

Throughout the day, more pickup trucks with Vermont plates in front and travel trailers behind arrive at the rendezvous, pick up tools and equipment, and disperse to the half-dozen or so other "locations." Nothing more than sidewalk space in front of supermarkets, these trading posts, strung like beads at major crossroads and shopping districts run from the Upper West Side of Manhattan through Spanish Harlem and the north Bronx. Such is the seasonal empire of Gopher Broke Enterprises, Christmas tree sellers.

Within minutes of their arrival, the crews begin assembling lengths of red, white, and green-painted two-by-fours into curbside racks that will store and display the trees. The job is complicated by the dense throng

their locale. You can't sell the same trees at Fordham Road in the Bronx as you do at 85th and Broadway on the Upper West Side of Manhattan. The right size is important, too. Taller trees sell well in neighborhoods with spacious high-ceilinged apartments. In others, where a sardine can might offer more living space than the average room, "tabletop" trees are a staple item. Each ethnic group seems to have its favorite

Learning how to take a "three-point" sponge bath with a saucepan of hot water is a necessary survival skill. Fortunately for the public, our clothes are soon saturated with the smell of balsam.

species of tree as well. Hispanics prefer White and Scots pines, Blacks and Asians seek out Douglas firs, while Italians and Irish are more likely to choose a more traditional balsam or Fraser fir. Working with Bean's round-the-clock "shuffle" crew, I try to fine-tune the mix of sizes, grades, and species for every load they distribute.

selling begins

By morning the transformation is complete. A forest has sprouted overnight between the parking meters. For half a block, the sidewalk is a boreal lane, lined with 100 or more glistening dark-green trees. The pungent scent of the Great North Woods blankets the normal olfactory substrata of frying foods and vehicular exhaust. People break stride to take a deep breath. An old woman stoops to clutch a twig in her gloved hand, holds it to her nose and smiles, before continuing on.

And soon enough, someone will stop to ask, "How much a foot?"

"I don't sell them by the foot. I sell them by the ounce. Air's cheap, branches ain't."

Or, "How much they running this year?"

"Oh, about half a block, if the night watchman's any good."

Or, "How much is your *smallest* tree?"

"You mean my *cheapest* tree?" I inquire as I escort them over to the "Charlie Brown" section where "symbolic objects" for those to whom cost is more important than comeliness are displayed.

Since there's likely to be a Korean fruit market or one or more competing sidewalk vendors within a few blocks of every location, "What's the range?" is a frequent query from shoppers comparing prices.

"From \$25 to \$50. Some for more, and some for less. We've got a tree for every budget."

The truth is, the art of tree selling consists of matching the money people are willing to spend (or maybe just a little bit more) with the tree it can buy; in other words, to pare dreams down to reality.

"Yo man, you got any blue pines?"

"You mean blue spruce? Like this one?"

"No man. That ain't it. The kind I like, it has soft needles. Like that one over there."

"Oh, you want a balsam fir."

"Yeah man, Boston fern, that's the one. How much? What, \$50 for a tree?! I can go upstate and cut one down myself for \$15."

"Well so can I, but they ain't growin' too many of 'em here on Broadway now, are they?"



The author makes his daily rounds delivering a few special request trees to this North Central Bronx location. Instead of a camper, this crew lives in a VW bus.

of passersby, some who step right over the pieces as if they weren't there. Sooner or later, a familiar face with a forgotten name will call out from the crowd, "Yo! Treeman! Que pasa?" and a conversation begun a year ago picks up where it left off. But the pace of the work doesn't slacken. The setup has to be finished by 10 p.m. or we risk violating the City's anti-noise ordinance. Residents have even complained to the police about the sound of our hammering amidst the clamor of sirens and traffic. Panels of plexiglass and plywood snap together to create a sidewalk office and shelter. Lights are strung over the racks. An overhead extension cord connects the camper to the store's power.

Even before we've begun to set up, the first of a dozen or more flatbed tractor trailers piled high with baled trees has already pulled into the vacant lot across from the shopping center. Snow that had fallen in Quebec and Nova Scotia falls again from the thawing branches of balsam firs as they are unloaded and sorted into piles for distribution to the locations. The quality and price of the trees must match

photos by George Nash



A magic forest has sprouted overnight on the sidewalk

"C'mon man, gimme a break. It's Christmas."

"Yeah, I know. That's why I'm selling trees."

An Asian gentleman once told me, "I'm from Hong Kong, I like to bargain."

I replied, "I'm from Vermont. I don't."

Despite an ingrained Yankee bias against the practice, I've had to adapt to local custom. With its large Hispanic population, selling trees in New York is more like bargaining for blankets in Tijuana than stopping for maple syrup at a hill farm stand in Vermont. Now, when an Hispanic person, pointing to a \$35 tree asks "How much?" I'm likely to answer, "Fifty."

"Okay. That's your first price, what's your last price?"

"Thirty-five."

"I give you thirty. Right now."

protecting the cargo

The one that always gets me is the person who asks, "What do you do with the trees at night?" Now it seems pretty obvious we can't exactly lock them up or haul them away. Someone's got to be there all night long to keep them from growing legs.

"You mean someone stays here all night long?"

Twenty-four hours a day, seven days a week, 23 days straight, it takes at least two people, working overlapping 16-hour shifts to cover a location.

"Where do you stay?"

"Right here at Hotel Bro'way," I reply, indicating the travel trailer parked behind the trees. While it's no RV park, camping

on the streets of New York isn't that bad. The trailers have heat, cooking facilities, and even a bit of privacy. What they don't have is soundproofing. You're not acclimated until you can sleep through the hydraulic Armageddon of a garbage truck loading up at 4 a.m. outside your window. The campers don't have running water either. Learning how to take a "three-point" sponge bath with a saucepan of hot water is a necessary survival skill. Fortunately for the public, our clothes are soon saturated with the smell of balsam.

At 6:30 in the morning, I'm dredged up from sleep by a thumping on the trailer wall and the voice of the night watchman calling, "Wake up time!" Promptness is more than a courtesy; after the bars close at 4 a.m. there's no place for the night watchman to

continued



Manhattan at 170th and Broadway.

relieve himself until the day help comes on duty. Standing in my long underwear, brushing my teeth and stray balsam needles out of my hair, I've already got a pot of strong Spanish coffee perking on the stove and a bagel toasting in the frying pan.

As chief go-fer, I can't sell trees all day long. Instead, tethered to a portable cellular phone, I spend the morning making the rounds, stopping at each location to collect invoices, work with salespeople, and deal with problems. Throughout the day, calls come in from suppliers, lost truckers, other tree sellers, locations with questions, and the shuffle crew. Usually, by early afternoon, after the daily books are done, I can return to my location and help sell trees. In the evening, once sales slow down, I retire to the trailer to finish the daily paperwork.

Because it's almost impossible to drive trucks around the city during the day, fresh shipments of trees are always delivered after midnight. Unloading, restocking the racks, nightly cleanup, and other duties make it easy for the watchman to observe the prime survival rule: always present a moving target. It wasn't until we used chain instead of rope to secure the trees to the racks that theft prevention became less of a problem than boredom.

When I mention to someone what I do for a living, they almost always laugh in disbelief, "So you pack a sawed off shot gun, right?"

Now I won't deny that someone was once held at knifepoint while a group of youthful "customers" made their selection, or that someone flashed a gun to help himself to the proceeds of a sale in broad daylight. There have been some dicey situations. I remember once, cornering a tree thief, only to find myself encircled by a distinctly unsympathetic crowd, facing a fellow who looked big enough and willing enough to hurt me had I tried to hurl more than curses at him.

"Merry Christmas, A*s!?!e! Enjoy the tree." There comes a time when you calculate the odds and cut your losses. No one is expected to die for a tree.

New York's warm heart

But such incidents are thankfully rare. Instead, in the 15 years I've been selling

trees I can think of many more examples where the city showed the warm heart that beats under its seeming indifference. People

A local roller skating drug dealer brings the night watchman a cup of hot Dominican chicken soup. The Chinese restaurant fills our thermoses with hot tea. People even invite us into their homes to use the shower. Even the street gangs offer us their protection.



The prefabricated plexiglass and plywood office provides both shelter and security. Decorated wreaths and live dwarf potted trees augment tree sales.

do tend to be nicer to each other during the Holiday season, but there's something else going on too. We're from Vermont, the mythic land of glossy tourist magazines and collective nostalgia. City people have idealized images about country folks, too. Our wool pants, checkered flannel shirts, our vests and knit toques play to those stereotypes. As outsiders, the rules about avoiding eye contact don't apply. We're safe to talk to. For a fleeting moment, with us, human connection is possible, allowed, and indulged. For over a decade, an old German woman has stopped by with fresh homemade cookies. A local roller skating drug dealer brings the night watchman a cup of hot Dominican chicken soup. The Chinese restaurant fills our thermoses with hot tea. People even invite us into their homes to use the shower. Even the street gangs offer us their protection.

The hospitality extends unofficially from the powers that be. The sanitation patrols allow us to leave our vehicles parked at

curbside when the streetsweepers go by, the parking cops overlook the meters. Of course there's a quid pro quo: trees are donated to the precinct house, the local hospitals, the fire chief's favorite charity or the garbage truck driver's uncle. Once I was stopped by a policeman as I did an illegal U-turn pulling away from a location. When his eye caught the large sheath knife all tree people carry, he asked, "So who the hell are you anyway, Crocodile Dundee?"

Standing on a busy corner in New York 16 hours a day for 23 days, you come to know the city with an intimacy most people do their best to avoid. And coming from the whitest, second least populated state in the Union, to a place where more people live on a single block than in our largest city, the tumultuous vitality of the spectacle, the comingling of every imaginable human, racial, and sexual possibility, brings home the truth of our recruitment slogan: "A vacation so weird, we'll pay you to take it!" But selling trees in the city is more than just a psychedelic experience. It's also a deeply satisfying one. Ultimately, what we are selling is connection, a most precious and rare commodity in any city. There is no better medium for this exchange than the Christmas

tree, that ancient talisman of the return of light. To the forest peoples of pagan Europe, the tree was a bridge between heaven and earth. This elemental symbol still exerts its power and fascination in cold windswept urban canyons. We bring green energy to the grey city. When a family carries their tree off, children happily struggling with the tip while Mom and Dad carry the heavy end, it's then that I know what it is we do and why it's worth doing. Every tree we sell becomes the center of a happy feeling. We truly are merchants of joy.

Until recently transplanted to the desert soil of Scottsdale, Arizona, where his wife is pursuing her family practice residency, George Nash lived on a run-down hill farm in Wolcott, Vermont, renovating old houses and helping raise five children. He also lived in Burlington, Vermont, where he ran a popular fajita stand, and wrote for *Fine Homebuilding* magazine. His book *Renovating Old Houses*, has just been published by Taunton Press. He'll be back for a return engagement of Balsams on Broadway this Christmas.

CLAY IN THE GARDEN

by Lydia Leavitt

photo by Lydia Leavitt



Wood Nymph. A mosaic tile medallion (17 in. in diameter) in the Art Nouveau style, evokes playful tranquility in a wooded setting.

Clay, a material of the earth, has a natural ornamental place in the garden. Decorative clay pots, tile accents, even a sculpted likeness of a favorite woodland creature can establish a tone and can add touches of warmth, color and whimsy to outdoor living spaces. As a ceramics artist and enthusiastic gardener, I have been drawn to creating works that are at home in the garden.

Color, texture and design, major considerations for any garden plan, also weigh heavily when planning to

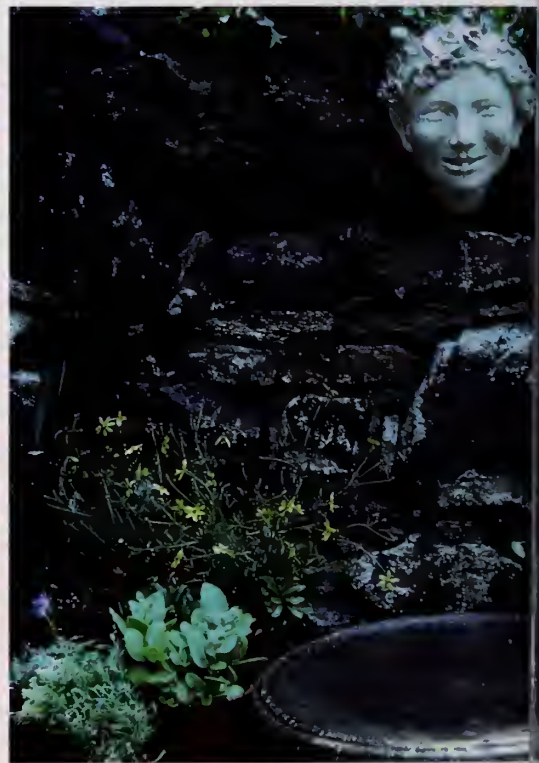
place art works in the garden.

One goes through the same process installing tiles on a garden wall as in choosing the location for hanging a painting inside. The established or intended tone of an area is the first consideration. Is it cool, shady, restful, or perhaps bright, sunny and playful? The actual space might dictate shape; should it be rectangular, circular, oval, and of what dimensions. A glazed ceramic tile plaque or medallion mounted on a stone wall, for example, provides a contrast of texture and a color

continued

CLAY IN THE GARDEN

photos by Lydia Leavitt



Top left: Life-size sunflower blooms on a heavily textured bas relief mosaic inspired by Van Gogh's paintings of these garden giants. **Top right:** A magnolia medallion (18 in. in diameter) adorns a shady garden wall. **Bottom left:** A delightful surprise, this 7-in.-high terra-cotta frog finds a bit of shade beneath a hosta leaf. **Bottom right:** The mischievous Satyr fountain leers cheerfully while cooling sounds of falling water add a fillip to a lovely garden niche.

Nature, in its most complex design, follows just a few simple but elegant patterns. I have long been a student of artistic styles that depict the essential grace and movement of nature in its simplest form. Among these styles, Japanese painting and its derivative, Art Nouveau, have been the most influential. Ceramic tile, with its rigid characteristics and hard edges lends itself well to stylized representations. I enjoy the challenge of finding the illustrative essence of my subject and transposing it onto clay.

— Lydia Leavitt

provides a contrast of texture and a color accent, which emphasizes the qualities of each element, establishes a focal point and directs the eye to the surrounding plantings. A plaque with some high relief or more sculptural elements might fit on a more evenly textured surface such as brick or wooden siding.

Choice of art works for any location represent an extension of ourselves, making our environment uniquely our own. Ceramic tile provides a delightful way to extend this option into the garden. In most cases, I have found that tile can be permanently installed on vertical surfaces within our zone, or simply hung as a piece and perhaps removed for enjoyment in an interior garden setting during the winter months.

Tiled tabletops are another excellent colorful accent. Serviceable and decorative, they have long found a place in exterior settings.

Special considerations must be given to other horizontal installations. Although earthenware or low-fire tiles are appropriate on a vertical plane, permanent installations on horizontal surfaces should be of a harder, more vitreous clay such as stoneware or porcelain. These materials have a much lower absorption capability, which protects the tiles from damage due to successive freezing and thawing. Moisture trapped in the tile under the glaze can cause the surface to crack off. This is not a problem for vertically mounted tile because moisture has little chance to soak in and can drain out more easily if it does.

Choosing handmade flower pots also provides options for different textures in the garden. Each plant can be set off by a pot that fits it perfectly in character, adding a delightful variety to the setting in general. I have experimented with a number of designs ranging from a simple wrap-around type to the more stylized "brick" type and relatively free-form pots resembling cabbages and opening blossoms. One idea invariably leads to another, some whimsical and some considerably more sedate. The shapes are round, oval, square, rectangular. I give the pots a clear glaze inside, which minimizes absorption, thus evaporation, and gives them the practicality of plastic while maintaining the warm look of terracotta. Potted plants in need of watering only once a day are growing to be a necessity for most of us with busy days filled with tight schedules.


In my garden I have a small but treasured collection of sculpted animal friends. I simply cannot resist the sight of a life-sized toad or turtle peeking out from behind a pot or from under some ground cover, which led me to create a few of my own, among them cats, rabbits, turtles, frogs, lizards. These are individually sculpted of terracotta; some are lifelike, and some are more characterized, but all are great friends. I find them delightful additions both outside and among the plants in my solarium during the winter. Artfully and sparingly placed they give the setting a bit of whimsy and offer an affectionate connection with nature at large. Sculpted faces used as fountains are also part of my growing menagerie.

In planning my garden, one of the main considerations has been that it be harmonious with the interior space; to bring the outside in and the inside out, while being mindful of the inherent integrity of each. I have made the garden an extension of the inside by using similar materials, wherever possible, and defining the space with retaining walls that echo the lines of the rooms. Soft textures of ground cover on the bank contrast with the necessary rigidity of plaster and paint with each contributing what the other lacks. The utility of the kitchen garden with its herbs readily snipped from a terraced bed coexists perfectly with the interior organization of a well-used kitchen. Just as there are paintings, flower arrangements and comfortable furniture inside, the garden contains a trellis with flowering vines, decorative plants, a cozy place to sit around a tiled table. The types of ornament used inside necessarily differ from those used outside but they are harmonious, establishing a sense of presence and place. This garden is part of its surroundings; it belongs here.

As our hands and minds have shaped the garden itself, carefully choosing the plants and their placement, our choices of additional ornamental features enhance nature's beauty and add a unique and personal quality.

Lydia Leavitt has been working as an independent clay artist in Wawa, Pa. since 1986. Her work has been included in some nursery exhibits at the Philadelphia Flower Show as well as in several galleries in the Philadelphia area, Key West, Florida, and currently in Keene, New York.

CREATING A WILDLIFE REFUGE ON YOUR PROPERTY

 by Priscilla Y. Huff

I've always been fascinated by the outdoors and native wildlife. Much to my mother's dismay, as a child I would come home muddy from catching frogs at a nearby pond and with my pockets full of earthworms.

My four brothers and I took for granted all the wildlife we encountered everyday in the fields filled with wildflowers on our small 10-acre farm in Bucks County. Ring-necked pheasants, box turtles, countless butterflies and species of birds, and families of skunks and possums inhabited our farm's old sheds in plentiful supply.

Today, some 30 years later, those fields have disappeared, and along with them the wildlife whose habitats have been turned into housing developments or paved roads and parking lots. Like the 1960's song, I ask, "Where Have All The Flowers Gone?" and the animals I was used to seeing?

I especially pondered that when my family and I moved onto a small, $\frac{3}{4}$ -acre property with two maple trees and three old apple and cedar trees on a rectangular grass plot on clay soil. Then using National Wildlife Federation (NWF) guidelines and information obtained from Peace Valley, my local nature center, plus my own research, we turned our property into a "mini" wildlife refuge.

We now have more than 200 different shrubs and trees, a small pond with a waterfall, a bog pond, a rock wall, a small wildflower meadow, nesting boxes (for bats as well as birds), bird baths and feeders, brush and compost piles, as well as some "typical" formal flower beds. With all this we still have room for a picnic and game area. And we're still not finished.

The best part is the variety of wildlife that has come into our yard: birds, frogs (even though the nearest pond is a half-mile away), turtles, toads, rabbits, deer, bats, and occasional visits from other mammals. Our neighbors on either side of us (who thankfully accept us as we

continued





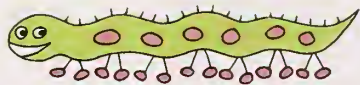


photo by
Merlin D. Tuttle/Courtesy of Bat Conservation International, Inc.



photo by Linda Pack



photo by Priscilla Y. Huff



photo by Linda Pack



Top left: Little brown bat (*Myotis lucifugus*), common in the Northeast, which can catch up to 600 or more mosquitoes in an hour. Although bats can contract rabies, less than a half of one percent do. If rabies is contracted, bats rarely become aggressive and die very quickly from the disease. **Top right:** Bat House: Ideally it should be located near a permanent source of water (marsh, pond, river) and hung 12 ft. to 15 ft. above the ground. Depending on its inside temperatures, your bat house's inhabitants may include a nursery colony with 30 or more bats; or a bachelor group of a half-dozen or fewer bats. Plans and/or houses are available from the Bat Conservation International (see address on p. 21). **Bottom left:** Common or great egret (*Casmerodius albus*), which rested in this backyard habitat for several days, feeding on rose hips and other food it found in several low, wet spots caused by excessive rain. **Bottom right:** Man-made waterfall in a rock garden attracts both insects and birds.

are) have nothing but acres of mowed lawns; still the wildlife have come to our yard to eat, bathe, and reproduce.

With a little planning and a relatively small investment, you can provide the conditions to attract wildlife, even in the city. The best part about planning a refuge in your garden is that once your wildlife habitat is established, it calls for relatively little care as opposed to more formal gardens. Even if you still prefer a cultivated "look," you can provide some hidden habitat areas that will attract a variety of creatures.

how to set up a refuge

The four main elements that all wildlife require to live are food, water, shelter, and reproductive areas. Although each species requires variations of these elements, they are not hard to provide. In essence, you are helping to set up mini-ecosystems that sustain themselves through biological food chains. Thus, your mini-refuge will mimic Nature attracting both prey and predators alike, though less dramatically than a true wilderness does.

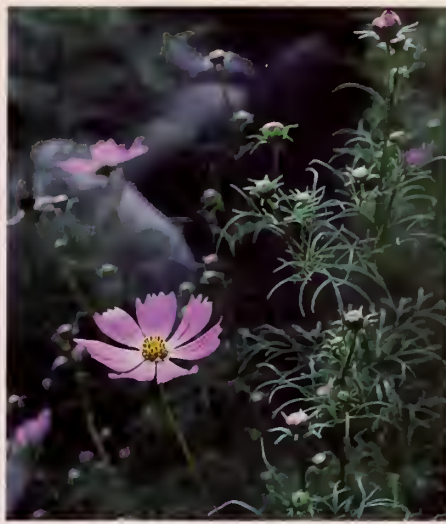
A true refuge will contain a sampling of all the native wildlife that your property can sustain: everything from worms, slugs, insects and arachnids, to birds, rabbits, reptiles and amphibians, rodents, and small and larger mammals. You may have to learn to accept some species you are not particularly fond of like mice, snakes, or bats, but each has its role in the food chain and helps keep Nature "in balance."

Here are some ways to provide those four essential wildlife elements in your garden.

FOOD

Providing year-round sources of sustenance will allow wintering wildlife that does not hibernate to stay in your backyard continuously. Insects and birds are attracted to many wild plants and flowers. Common milkweed (*Asclepias*), common mullein (*Verbascum*), and goldenrod (*Solidago*) all attract a variety of insects and provide seeds for birds into the winter months. Tall grasses also provide seeds and cover for birds, rodents, and reptiles.

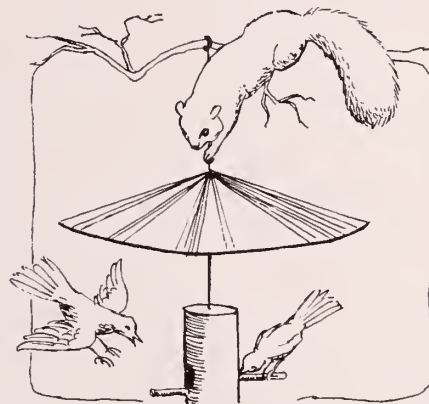
Creating a meadow area in your garden would provide food and could be attractive. If the plants are not endangered, transplant them into your own garden from roadsides or wild meadows, or get seeds from companies that sell wildflower and grass seeds. If you know of a future construction site,



Pink cosmos grows near a waterfall and attracts pollinating insects and is a favorite food of such birds as goldfinches.

get permission from the owner or boss to dig up wildflowers and plants before they are bulldozed.

Evergreen trees and shrubs also provide berries and cover for birds and other animals in the winter months. Some, like holly (*Ilex* sp.), have berries that do not become edible until late winter when the chemicals



in them turn to sugar to provide a continuous supply of food.

A mixture of tall and small shrubs and brambles will provide both summer and winter fruits. Blackberry, red and black raspberry bushes and rugosa rose (*Rosa rugosa*) provide food and protection with their thorny stems, berries and rose hips. Autumn olive, (*Elaeagnus commutata*), staghorn sumac (*Rhus typhina*), and tatarian honeysuckle (*Lonicera tatarica*) are tall shrubs that attract birds and other species.

Provide low-growing fruits and vegetables for box turtles and snakes. Many reptiles and small mammals such as opossums, shrews, and moles enjoy earthworms and other invertebrates, which you can attract with rich, humus soil and the cover of logs, or large stones. Spiders like the same cover of rocks and logs, plus the tall stems of flowers and grasses from which they can spin their webs to catch their prey.

Your garden should also include ground-covers such as the Virginia creeper (*Par-*

thenocissus quinquefolia) and viburnums; small, berry-producing trees such as the dogwoods (*Cornus florida* and *C. kousa*), crab apple (*Malus* sp.), etc. If your property size permits, add some taller trees such as the oaks and tulip trees (*Liriodendron tulipifera*) that drop acorns and seeds for hungry birds, squirrels, and other seed-eaters.

Don't forget to leave the seed heads on marigolds, zinnias, and sunflowers. The birds love to eat from them. One of my favorite late summer and early fall sights is seeing the brilliant flashes of golds and blacks as flocks of goldfinches feast on my cosmos' seed heads.

As winter comes, strategic feeding stations for birds, squirrels, deer, and other small mammals that remain active can help wildlife through hard winters and can allow you to observe behavioral displays. Once you begin feeding, though, many animals and birds depend on the food you provide, so make sure you can afford the food and time it takes to supply their stations.

Feeders are easily made, and a variety of them will insure that all sizes of birds and mammals can reach what you set out. Baffles will prevent squirrels from stealing your birdseed (give them their own corn); and special hanging suet holders allow nut-hatches, titmice, and other clinging birds to eat while keeping away starlings and sparrows.

Many birds and animals love fresh fruit, especially in the winter; stick it on broken tree branches or just set on the ground. Make your own mixes of treats for your wildlife; check with your local library or nature centers for books and information on what foods each species prefers.

WATER

Every wildlife species needs water throughout all seasons, and each requires it be set out in different ways. Shallow dishes or saucers of water attract toads (they sit in it and absorb it through their skins), and some songbirds do not like the deeper bird baths.

If space permits, add a "pond" using half of a whiskey barrel sunk into the ground or one that has been excavated and covered with special liners and equipped with pool recirculating pumps. Specialized gardening centers can provide you with all the necessary materials and information to "pondscape" your property, complete with water plants, fish and tadpoles, which help

photo by Linda Pack

illustration by Julie Baxendell

WILDLIFE YOUR GARDEN MIGHT ATTRACT*

WILDLIFE	FOOD	HABITAT
Amphibians		
Toads	Insects/earthworms	Grasslands, woods, near water (lay eggs in strings)
Frogs	Insects/small fish	Wetlands, swamps, ponds, streams (lay eggs in jelly mass)
Salamanders	Earthworms, insects, crustaceans, fish, even small mice	Moist forests, near streams; live under logs, stones
Reptiles		
Turtles	Omnivorous: wild fruits, fish, earthworms, insects	Damp forests, ponds, streams, fields
Snakes	Eat large amount of rodents, fruits, fish, eggs, small birds	Woodlands, near streams, grasslands, rocky areas
Mammals**		
Opossum	Insects, fruit and grain, other small animals, carrion	Farmland, forests, usually near water
Shrews	Insects, mollusks, earthworms	Moist soil in grasslands, forests, brushy areas
Moles	Insects, crustaceans, snails, earthworms (Not plant roots)	Moist soil in meadows, forests (help aerate the soil)
Bats (Only flying mammals)	Eat a tremendous amount of insects	Near wooded areas near water; roost in tree hollows, caves
White-tailed deer	Green plants, acorns, nuts	Forests, swamps, adjacent brushy areas
Mammals (carnivores)		
Raccoon (caution: often carry rabies)	Rats, mice, small rodents; fruits, berries	Bottomlands, forested edges of streams
Striped skunk	Grasshoppers, ground beetles; eat many mice; other small rodents	Open forests, farmlands, brushy areas, usually near water
Red or gray fox (caution: spread rabies easily)	Small mammals, rodents, birds, insects, fruit, carrion	Farmland; forests with open areas
Rodents		
Woodchuck	Insects, berries, fruit; but can damage vegetable gardens	Burrows; to protect gardens use an electric fence above and bury one at least 8 in. in ground
Eastern chipmunk	Nuts, slugs, bird eggs	Forests, brushy areas, gardens
Squirrels	Acorns, nuts, seeds, berries, insects, eggs, stolen birdseed	Forest, parks, suburbs
White-footed mouse	Seeds, tips of grass. Beneficial as a "buffer species" as it is eaten by almost every other predator	Meadows, brushy areas, brush piles
Norway rat	Eats almost anything, plant or animal, dead or alive. Undesirable as spreads disease, and contaminates food. Keep meat wastes out of compost piles which attract them.	Buildings, wharves, dumps
Rabbits (order Lagomapha; no longer groups as rodents)	Eats clovers, grasses, some seeds, damage to gardens, plants which you can protect with wire.	Burrows in brushy areas, forest edges, swamps
Game Birds		
Ring-necked pheasant (from Asia)	Eats 56 species of plant foods and many insects	Habitat of grain fields, meadows, old weedfields, is rapidly disappearing.
Wild Turkey	Insects, fruit, nuts, grains, green plants	Live in or near forests
Predator Insects		
Green Lacewings	These destroy aphids, and other insect pests. Can be used as "natural" controls as an alternative to pesticides.	
Ladybugs		
Praying Mantis		
Wasps		

* This is only a partial listing of wildlife you might attract to your "mini-refuge." There are many sources of information about attracting birds, butterflies, etc. to your backyard.

** With the increase of rabies, never approach wild animals exhibiting strange behaviors, etc.



eliminate mosquito larvae.

If you already have a pond or stream on your property, create shallow areas for wildlife bathing and amphibian breeding areas. Muddy banks will allow butterflies to drink, and setting large stones or anchored logs in the middle of the water give turtles, frogs, waterfowl, or wading birds the opportunity to rest and bask in the sun.

A slow, dripping waterfall that splashes onto flat rocks before it goes into your pond will attract such birds as warblers that prefer this type of water for bathing. The water can be recirculated by pump.

Water heaters placed in bird baths and small ponds will give wildlife a steady supply of water in the winter and keep fish from dying of gas buildup.

SHELTER

Wildlife needs protection from the weather and danger. Young of all species need to be safe until they can survive on their own. You can provide safety in a variety of ways. Dense evergreens, grasses and hedges provide both cover and nesting areas. Leave some standing dead wood for nesting cavities and hollow logs for cover (avoid cutting down trees in the spring that may contain nests).

Stone walls attract insects and may provide homes for black or garter snakes. Leonard Knapp of Sellersville, Pennsylvania, an amateur herpetologist for more than 20 years, laughed when I asked how to attract snakes to one's backyard. "Most people call me to get *rid* of snakes, not how to get them!" Knapp says, "Snakes are beneficial because they eat slugs, earthworms, mice and rats. They need an area that will be basically undisturbed and a hunting range of possibly several acres."

You can also build a brush pile of sticks, woody plants, etc. to protect rabbits, birds, etc. from hawks and other predators. Put it in an unobtrusive place so it won't bother your neighbors. You can even give a toad a "house" to cover it from the hot summer sun by turning a clay flower pot on its side and sinking it into the cool dirt about halfway.

REPRODUCTIVE AREAS

All species reproduce, and if you provide structures or areas suitable to raise young, you will attract many kinds of wildlife. Many of the dense plantings and trees mentioned earlier can provide nesting sites. (Warning: weed your garden regularly or you may find a nest of baby rabbits as I did this past summer, right between my carrots

and beets.) Roosting or brooding boxes can be built for bats to raise their young, not to mention all the different bird houses you can build.

"Good" insects, e.g. solitary wasps (not the social and bothersome yellow jackets), can be encouraged to nest by drilling holes into logs (4mm to 1 cm, 1/6-2/5 in. in diameter) or by attaching bunches of drinking straws under windowsills (plug one end of each with modeling clay). The wasps destroy large numbers of aphids and other insect pests. Hedges and tall, woody-stemmed wildflowers provide praying mantis with places to lay their egg cases in the fall.



Illustration by Julie Baxendell

Hollow logs and trees can provide nesting areas for birds, rabbits, rodents, and small mammals.

planning the mini-refuge

Include the four basic needs of wildlife. Plot on paper your existing property and its plantings and recreational areas. Then decide with your family what areas you want to keep and those you can alter into habitat areas. Put these changes onto a new paper and decide which steps you will add first. Some steps like building nesting boxes can be done right away. Others like excavating for a pond or building a stone wall may take several seasons.

Basic research and inquiries to your County Extension Service (listed in the local government section of your phone book) or garden or nature center can help you learn which wildlife is native to your area, and they can suggest how to bring it to your property.

When creating a mini-refuge, you may find your attitude toward gardening changing. Before, you might have sprayed with chemicals for every pest, or sought to eliminate every weed, or dead tree or log. Now you know spraying harms wildlife, so you learn to attract natural predators. You will learn to co-exist with the wildlife using organic controls and physical barriers of

large and small fences to protect your plantings. You will "see" your property from a different perspective: through your wildlife's "eyes."

You may no longer have that perfectly manicured property, but your newly created mini-refuge will bring an interesting new world of wildlife to your backyard for you to watch and study. Best of all is knowing that your refuge helps our wildlife to continue to exist, another day, another week, and we hope for all future generations.

INFORMATION SOURCES

Backyard Wildlife Habitat
National Wildlife Federation
8925 Leesburg Pike
Vienna, Virginia 22184
Phone: (703) 790-4434

Backyard Wildlife Habitat
Program started 16 years ago.
Write for their free packet.

Bat Conservation International, Inc.
P.O. Box 162603
Austin, Texas 78716
Phone: (512) 327-9721

Protects bats and their unique habitats worldwide through education and scientific study. Offer plans to construct bat houses.

National Gardening Research Center
Highway 48
P.O. Box 149
Sunman, Indiana 47041
No phone listed

This company offers a catalog of organic, biological, and natural pest controls including the sale of predator insects.

Wildlife Information Center, Inc.
629 Green Street
Allentown, Pennsylvania 18102
Phone: (215) 434-1637

Works to protect wildlife habitats. Send a self-addressed, stamped (two first class stamps) envelope for more information.

(Note: Experts recommend you "observe" wildlife and protect or provide their habitats. *Do not try to tame or make pets of them.*)

Priscilla Y. Huff, a gardener and naturalist, has written on these subjects for *Pennsylvania Magazine* and *Delaware Valley Magazine*.

The Fickle Gardener

by Barbara Bruno

photos by Barbara Bruno

I am a fickle gardener, a feckless Casanova reviewing conquests, as I search my files for a slide. Here are beguiling plants long sought, hard obtained; the passions of a moment dismissed by my shifting whims. But now philosophical distance intervenes with an apt observation from a recent garden newsletter, "the



changing nature of the garden."

The fragile bits of film glow sumptuously on my viewing table. Their vivid panoramas are verdant footprints revealing the progress of a voracious curiosity. Here, shimmers easy floriferousness, a novice gardener's first taste of gardenmaking's joyous fruits. I recall a shiny spade and

awkwardly turned splits of pale, sandy earth; a double dug bed, rough rectangle of little consequence among weedy stubble. Lacking funds, I grew whatever I could lay hands on.

That first garden had the charms of youth. It was exuberant, experimental, militantly organic — and it seemed to

continued

Left: A first garden: exuberant, experimental, and militantly organic.
Right: The garden now had an old rose season, and the maturing trees changed the nature of the garden.





surpass my wildest aspirations. Seemed to. For even as I basked in its polyglot delights, the blossomy unknown claimed my fickle eye. Quaint herbs and silver-leaved finery, succulents and others forgiving of poor and droughty conditions replaced the rough and ready throng with a studied richness of texture and color.

In gardening, as in life, simply opening a book may be as fateful as a cast of dice. A few words' soft tread bewitches; desire springs from enchantment. Before gardening was my privilege, I claimed, for a quarter at an open air stall, a brittle, faded text: "POT-POURRI from A SURREY GARDEN," by Mrs. C. W. Earle (Smith, Elder & Co., London, 1912). Amid the chatty recounting of garden trivia, the book had fallen open onto a fragrant hint. It recollected a vanished paradise of child-

It wasn't the quaint description of that old garden, but the sweet breeze of a lyric ideal, like the scent of lavender among old keepsakes, that came to personify for me what a garden could, should be.

hood where, "An ever-flowing mill-stream ran all round the garden; and hedges of China-roses, Sweetbriar, Honeysuckle, and white Hawthorn tucked their toes into the soft mud, and throve year after year." It wasn't the quaint description of that old garden, but the sweet breeze of a lyric ideal, like the scent of lavender among old keepsakes, that came to personify for me what a garden could, should be.

Old garden books magnified my yearnings: for Miss Jekyll's blowzy pinks, for Mrs. Keays' roses,* "full, globular, heavy" or "clustering roses of large and very tiny bloom, climbing roses and bush roses . . . Moss roses, Scotch roses, and Briers . . . all grown together along the garden path." And where were, the "willowy self-sowers, "flowers of grace," of that garden prose conjurer, Louise Beebe Wilder?

old plants, other visitors

Old plants became a passionate obsession that yielded a succession of alluring antiquities. Now, the garden had an old rose season and an abundance of fine old iris, iris in excess, too winsome to be

**Old Roses*, Mrs. Frederick Love Keays, The Macmillan Co., N.Y., 1935.



Left: Flanders' poppy (*Papaver rhoeas*) grows where the late sun can fill its scarlet cups.

Right: The mature autumn garden mellows toward winter.

discarded. Lettuce and onions made way. An early iris garden usurped space along the lavender-bordered edge of the plot where vegetables grew.

The vegetable garden, well cultivated, available, always depot to blossomy surplus, to screamingly unmixables, to grand but ungainly oddities now became subject to the high tides of my floral passions. There was the year of the sunflower, large, larger, largest, and the multitudinously small. They were butter and butterscotch, primrose and cream. They were almost-scarlet, and Indian red and bronzy brown, and many shades in between. They opened timelessly pagan blossoms, and the glow of their numbers alerted exotic birds from the county's four corners: Goldfinches, and indigo buntings unseen before or since.

Another flirtation began with a few lush

But trees will grow; time finds us dappled to death.

rows, prickly with the husks of papery blossoms. The rows multiplied until as many as three dozen kinds shouldered the indomitable tomatoes. The flotilla knitted together. Its daily growth swelled each morning with odd and vivid blooms. Picking and drying was a great adventure — for a time.

All along, other plants were winning the fickle gardener's heart. Their simple blossoms complemented the seasons' luminaries, and they gained in garden importance with each year. Their variety was enormous, and they were easily obtained. Their seeds and

roots came from the flowery roadside plains, from cropland and cow pasture, from woodland clearings. They flourished, refreshing the garden with their wild identity. I especially doted on drifts of small white daisies: the common oxeye and the delicate-leaved and lacy wild chamomile *Matricaria maritima* that so enhances iris and poppy bloom. *Gnaphalium obtusifolium*, the spicy "curry" of barren fields, grows mightily in flower borders. Its everlasting heads of creamy white distinguish the fall garden. The verbascums, thistles, asters, and chicory are all past loves that have stayed to lend beauty to some odd corner.

One year I could not garden for a springtime. To squelch the looming certainty of weeds, I emptied some jars of seeds I had saved onto the thawing vegetable beds. The act was a gesture of desperation, faith, and curiosity, a surrender to serendipity. Come May, the flowery patchwork seemed a celebratory blending of art and nature. It was also, when I thought about it, an international gathering. My contributions were the blue-eyed *Nigella damascena*, "of Damascus," and the scarlet *Papaver rhoeas* out of Asia by way of Flanders' wheatfields. A local weed, a fillip supplied by providence, was wild chamomile, probably an immigrant, as well. Like icing on a cake, its froth of diminutive, yellow-centered, white daisies made the celebration.

poppies

Not coincidentally, my current amour is that ephemeral beauty, the annual poppy. I should say poppies. There are enough kinds to keep an admirer freshly enthralled for many seasons. They are, all of them, the vibrant epitome of the desirable yet not always easily managed. Too fleeting of flower for a border sowing of any size, they

continued



Variegated grass, *Miscanthus sinensis* 'Variegatus,' shows off brilliant annuals, larkspur and gaillardia.

26

have waltzed across the beleaguered vegetable garden. A few packets, mushroomed to multitudes last spring by self sowing, are only a tease. Will I ever be satiated until the whole garden flutters with their translucent cups? I love them all: the Shirley's repertoire of diaphanous pinks; the London fog colors of 'Mother of Pearl'; scarlet and white splendor of 'Daneborg Lace'; that awesome pretender, the 'Peony Flowered'; but best of all I love the Flanders' poppy. The 19th century English art theorist Ruskin called the Flanders' "painted glass poppies," and I grow them where the late sun's oblique blaze can fill their scarlet cups. These

flowers are descendants of the pestiferous "corn" flower whose blooms opened in arresting thousands across grain fields of northern France and Belgium once called Flanders. This is the luminous flower Monet painted. It is the shimmer among sun-dazzled gold that fills Van Gogh's hastily painted canvases.

We garden with the future, yet our decisions have a way in maturity of unsettling well laid plans. The sun-drenched gardener covets shade, plants trees, tender saplings that seem decades away from importance. But trees will grow; time finds us dappled to death. Gardening is a tricky

art. Forever flourishing plants suddenly refuse to grow, taking the light of their season with them. A strangely undiscussed malaise strikes with time's passing. That majesty of shrubbery, the exquisite perennial planting so long in perfecting, and despite the best care, deteriorates and unravels our best laid schemes. What to do?

the vision? or the wind?

Some struggle to follow the original dazzling vision. The fickle gardener's inclination is to tack in the wind. And here a fresh yet familiar wind is blowing. There is something wistful hanging over my carefully planned groupings. I moon over that zestful jumble of other days. Is it nostalgia, or will my change of heart ironically close the circle, lead back to the casual exuberance of my first garden?

I notice lately that I'm taking another look at plants I once thought I'd looked at too much. I find myself engrossed in the supermarket's racks of perky annuals. I've backtracked to carefree categories I've barely sampled; I linger over descriptions of the elegantly untamed: garden grasses. Fine and copiously unorganized fountains seem just the thing to shake up my static borders and to challenge my stale thinking.

A shake up is in the air. The agenda is undecided, but the die is cast. Which stately trees must go? Which paths ripped up and rerouted? Which beds and their tons of fragile roots and foliage shifted? Which perennials scrapped?

One day, the deed is done. Refreshed, the garden begins again a joyous green ascent, its beds filled with a familiar but revived company. Filled, but never too filled for a fresh amour.

•

The weathered building, known as the studio, is the focus of Bruno's garden. It was once a seasonal home for farmworkers before being moved to its garden location.

*A sure-fire solution to
a lawn that turned tan
three years in a row.*

EXPERIMENT WITH STONESCAPING

 by Marie D. Hageman

photo by Marie D. Hageman



For three years the author limed, seeded, fed and weeded her lawn through spring and early summer. She watched it die because New Jersey prohibited watering. The solution: stonescaping, which minimizes chemical use, watering and garden maintenance.

Chances are you haven't heard of stonescaping but you've seen it proliferating. I coined the name to help find an answer to a problem, then found I was riding on a problem-solving trend.

In 1986, for the third year, our lawn turned to tan crunchies — like breakfast cereal — in record-breaking heat and drought. Searching for an aesthetically pleasing alternative, I noticed all around us people were stoning their lawns with varying degrees of success.

An ostentatious suburban residence was fronted with something resembling a parking lot. A city house on a hill menaced pedestrians with slippery pebbles sliding down onto the pavement. Along an entrance path to an otherwise lovely home, a row of yews shed their berries on stones used as mulch, coating them with rancid smelling slime.

There were also handsome landscapings with stones predominating. I wanted an

expert to create for me a landscape as delightful as the successful ones and to avoid the mistakes of the failures.

I didn't know anyone in the field at the time.

I searched the telephone directory and the "green industry" ads in newspapers. Eventually I asked some local contractors for an estimate.

When I explained what I wanted I confused them. One asked, "You mean you want a big rock garden?"

"Not exactly," I answered. Rock gardens are usually begun, in our Jersey flatlands, by adding a mound of topsoil. I wanted our topsoil skimmed off to make room for stones in an attractive design on the lawn level.

The replies from the landscaping contractors shocked me. One said he had to use stones all one color so he could get a good price on them.

One said I didn't need borders or dividers. "Stones don't go anywhere."

Another contractor asked for \$9,000, to "make it beautiful." No detailed information in advance.

do it myself?

Could I do it myself? I went for advice to the successful do-it-yourselfers, stone dealers and distributors, then researched books and magazines in libraries.

I discovered what I was seeing was not as new as it seemed. It is rather a contemporary Americanized version of an art as old as the stones. Ruins of the "sculptured gardens" in the ancient metropolis of Delhi show grounds once covered with designs of stones and plantings. They resemble modern stonescaping much more than the "sculptured gardens" of modern artists like Isamu Noguchi.

You can see similarities in some contemporary gardens to the elaborate geometric designs of Moorish gardens in Spain in the 8th to the 14th centuries. Chinese gardens used stones with mystic symbolism

continued

STONESCAPING

before European civilization began. We often copy the pagodas and something of their style without the significance. Their techniques were passed to Japanese who developed their own unique styles using raked gravel and sand, rocks and plantings symbolizing God, man and earth, in elaborate formalized designs, all the way into the present.

I decided to go for it, adapting touches of this rich heritage in plans for an eclectic garden to harmonize with our eclectic house. I dreamed of a Chinese pagoda, a Japanese lantern, hybrid roses in the Victorian style, and a variety of other plantings all tied together with beds of ornamental stones.

The side yard was pure realism — no dream stuff. It had a fenced-in utility area shared by our dog, a stack of firewood for our fireplace and a compost pile. That, and the area around our patio, would remain turf. Not the fine Kentucky bluegrass cherished by some of our neighbors, but the New Jersey Blend developed by Rutgers University to thrive with minimal care and watering in our state. This utility section is partially screened by trees, shrubs and vines on a fence, so the coarse grass would not be seen by the public.

A raised planting bed would break up the monotony of our flat land, which slopes almost imperceptibly, just enough for water to run off. The raised bed was centered where side lawn and front lawn merged. I delineated it in free-flowing lines like the ground-level bed of shrubs and flowers centered alongside our house. To balance it, I planned a smaller planting area, with a semi-circle of the same stones across the driveway surrounding a purple plum tree.

The driveway would be widened with a parallel bed of stones. Foundation and other planting beds would be enlarged. A circle around lone trees and shrubs was marked for cover with organic mulch. The remaining space (what was left of our former lawn) was allocated for beds of ornamental stones, divided by softening curved lines.

shopping for stones

Armed with a sketch of my dream and necessary dimensions I went shopping for stones. That part was pure pleasure. The variety of types, sizes, colors and prices was challenging, and dealers were very helpful.

I soon learned the basic types. "Natural stones" are ones you buy in their natural size and shape, rounded and smoothed by weather and water. They are usually gathered, not quarried. The most popular natural stone seems to be "river rock,"

scooped up from rivers. Pebbles are the smallest of these natural stones. I learned the hard way they are not for walks.

"Crushed stones" have jagged edges because they are crushed, or broken from larger rocks. They are usually quarried. These are the kind that crunch down forming a firm base for walks and drive-ways.

"Lava rock" resembles other natural quarried stones but belong in a class by themselves. They are so lightweight, they will float. Lava rock boulders can be handled by do-it-yourself gardeners with a hand truck.

"Featherrock®," also a product of volcanic action, is light and easy to handle with gloves. Gloves are a must; lava rock and Featherrock® are abrasive.

Natural boulders are sculpted by nature. Some may resemble a modern statue or a miniature mountain, in Japanese fashion. They are heavy. To place a boulder you need heavy equipment and a pro to operate it.

"Flagstones," "stepping stones," "ledge rocks," and other names refer to rather flat stones, irregularly shaped, about 8 to 14 in. long, 6 in. wide and one to 2 in. thick. They are used for paths and walls.

Rocks are big stones. Just to confuse us, medium-sized stones go by either name, and names of stones differ from one place to another. "Jersey Gold" in Pennsylvania is, "White Pebbles" in New Jersey. "Granite Gravel" may be called "Granite Chips" and "Crushed Granite." The easiest way to comparison shop is to carry a sample of what appeals to you.

Man-made rocks are abundant. I first saw "Eldorado Stone" providing a strikingly attractive wall for a raised planted bed at the entrance to the Philadelphia Flower Show (1989). The display was created by the Niagara Parks Commission School of Horticulture, Niagara Falls, Canada. These realistic-looking stones are a mix of portland cement, mineral oxide colors and lightweight aggregates. Stones created from plastic, fiberglass and other materials can look quite authentic. Man-made boulders and large rocks are hollow inside, therefore light to handle.

placing the stones

When I had made my selections, I contracted a backhoe owner to scalp the lawn and agreed to employ supplementary muscle power to help me smooth and stone it. After the former lawn became a rough brown earth surface a little lower than the driveway, I discovered my help had escaped on an extended vacation.

I did what any real gardener does when upset — dug in. Before long a teenager asked, "Can I help?" Looking at his size I decided he couldn't do much to alleviate the labor shortage, but I agreed. Another came and another. Before that hot, dry summer was over, 17 youths had worked on our stonescaping — some only a few hours, some almost every day for weeks. I paid them more than they could earn babysitting and less than an adult laborer who could do twice as much per hour.

These teenagers, too young to get work papers, too old to enjoy playing all summer, made excellent sources of help. We contacted the insurance agency to be sure our homeowner's policy covered any possible accidents. (There were none, thank goodness.) I used precautions equally valid for older folks not accustomed to heavy work. Take it easy. Don't fill the wheelbarrow. Rest frequently. Lots of lemonade.

Once we cleared and smoothed the ground, we did what no ancient had ever done. We covered it with plastic sheeting. Leaving uncovered space at lowest points (puncturing where necessary) allowed storm water to drain into the soil. The plastic prevents stones from working down into the ground. It also prevents weeds from growing up, except at joints where there is no overlay, such as where the path meets stone beds. At the edges and at uncovered places, weeds make their appearance; it's better, however, than having them pop up all over.

Around trees and shrubs we drew a circle out to the drip line and covered this ground with nothing but organic mulch. This is particularly important where flowers or fruits fall onto the ground. They can join the biodegradable mulch to enrich the soil. The whole mixture seems to disappear into the soil. When needed, another layer of mulch covers it attractively.

We used porous plastic landscaping fabric around some trees and covered it with cedar bark mulch. Only a few energetic weeds pop up through this.

Some people prefer roofing paper or tar paper to plastic, claiming it is more durable. Plastic disintegrates in the sun. Another reason, in addition to aesthetics, to keep plastic well covered with stones. I'll never again let my plastic see the light of day.

We set borders between what would be stone beds to rise at least one inch above the stones. Brick borders to match the house, black plastic borders for space-saving efficiency, and light stone borders made of those pretty rocks dug up in the preparation. Others use wooden poles and railroad ties.

continued



1. Young helpers prepared the soil for the extended vegetable garden, after the backhoe removed it from the area to be stonescaped in the foreground. No workforce ever had more fun. 2. Before stonescaping. 3. One year after completion, shrubs, trees and flowers are growing but so are weeds around the tree not protected by plastic (in foreground). The area under the tree was soon covered by porous plastic to discourage weeds. Five years later the author continues to plant other trees, shrubs and flowers. 4. The author used different kinds of stones for different areas.

STONESCAPING

I selected the heaviest plastic bordering material because it would be the most durable of the plastics. Of course it had to be the hardest to install. Rolling it out on the driveway under a hot sun, weighted down with bricks, made it more pliable.

Staggering orders of stones, bricks and other necessities to arrive as we needed them kept clear a maximum amount of work space. By working from the areas closest to the house, out toward the street, we avoided walking a wheelbarrow over completed beds.

the dry wall

For the dry wall to support the raised planting bed, I chose ledge rocks called, "endless mountain," aptly named for their rich shades of purple like a scenic mountain. Gray-green lichen grow on them, furthering the illusion.

Building a dry wall was easier than I expected, guided by Barbara Stubbs, co-owner with her husband, John, of Delsea Stone of Clayton (N.J.). She has also taught county extension courses, so she could augment the instructional literature stone dealers distribute.

She encouraged me, relating that she had "learned stonescaping by the seat of the pants — trial and error. It's a common sense science."

I lay the largest ledge rocks on the flat ground at the base of the mound of soil,

slanting them slightly toward the bed. They would be surrounded by pebbles up to their height. Selecting which rocks go where is like putting together a giant jigsaw puzzle, which doesn't fit quite perfectly. Each rock was placed to cover the meeting point of the rocks below. We filled crevices with broken pieces of the ledge rock, then packed soil tight in between and behind.

Working my way around, I got a new idea. Instead of closing up the wall, I left an opening about half as wide as the path a few feet away. I sloped the soil down to ground level. Into this I worked a couple of smaller pieces of the same stepping stones in the path. When the Chinese pagoda topped the raised bed, miniature path and miniature steps were in proportion. I had the suggestion of a real plateau topped with a real pagoda. Later I added plantings to enhance the illusion.

Finally, crushed stones and pebbles were shovelled into the wheelbarrows, carted to the waiting beds and raked to make a smooth coating about two inches deep. The path was constructed the same as the decorative beds. Then, we worked stepping stones into the bed of pebbles. Now, I would reverse it, using the pebbles for a decorative bed and crushed stone for the path.

I wanted a border to tie it all together and make it a unified whole with the house. For this I chose bricks that match those on the

front of the house, and inserted them at a 45° angle, around the perimeter of the lot. This prevents foot traffic.

the planting

The planting and replanting began before the stone work was completed. It's still going on, five years later.

We added a corkscrew willow for its softening effect. Our ordinary blue rug juniper was dramatized by fingering out over stone. Purple ajuga soon covered its extended planting bed and crawled over the pebbles beautifully. It echoed the deep purples of the endless mountain rock walls.

Under ideal conditions forsythia should complement the stones, but recently weird weather sabotaged ours. Lilacs, another harmonious bush, needed a generous supply of water. Without it they wilted and dropped blossoms. But when mother nature watered overgenerously they developed powdery mildew. Live forever (*Sedum telephium*) and violets thrive as rock's companions.

Rescued from the ordeal of frustrating exterior maintenance, we have entered a new stone age, one, I hope, with many splendors.

•

Marie D. Hageman has researched, studied and created stonescaping for five years. Her articles on the subject have appeared in several magazines. She has a degree in visual arts with electives in horticulture.

LETTERS TO THE EDITOR

"Let the Machines Roll"

30

I enjoy very much reading *The Green Scene*, with its well-written, beautifully illustrated, practical articles relevant to the local horticultural scene. However, I would like to take issue with the implied message in "Let the Machines Roll" (Sept./Oct. *Green Scene*) that machines are somehow a panacea for gardeners. They certainly have their place in doing heavy work or on large properties, but they do not save energy, they *consume* it, often in large quantities. It blows my mind (excuse the pun) that Mr. Chandoha, who admits to disliking machine noise, advocates using a blower to windrow the leaves on his property. Better to simply rake them out of beds, etc. onto the lawn, make a pass with a mower to shred them, and then a second one to pick them up for composting or mulching. For a light covering, one of the new recycling mowers works fine. As for the pool terrace, porch and driveway, better to hang up the blower and use the good old broom. It's good

exercise, significantly quieter, and consumes no fossil fuels.

Let us get out of the habit of using machines simply because they exist, or buying them because everyone else does.

David W. Messer
Royersford, Pa.

Give a year-round gardening gift

a *GREEN SCENE* Subscription to your family or friends.

A BARGAIN AT \$9.75:

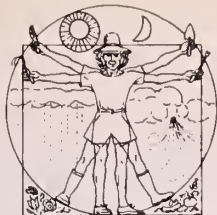
SEND SUBSCRIPTION TO:

FROM:

Return check and coupon to:

Green Scene, PHS
325 Walnut Street
Philadelphia, PA 19106





A PLAN FOR EVERY GARDEN

by Kathleen Mills

Putting your landscape design ideas on paper to create a new garden or to renovate a portion of an existing one, isn't just a sound idea; when two horticulturists share their lives and their garden, it's a necessity. Two years ago my husband, Tom Gensel, and I moved into our first home, full of expectations, each with a personal vision for our backyard. Tom saw gently curving lines, a growing tree canopy, understory plantings and every shade of cool, restful green. This vision doesn't work well for compulsive collectors and perennial lovers, whose sole desire it is to have one of each. Anyway, a 1,500 sq. ft. backyard doesn't really lend itself to sweeping drifts.

"Put it down on paper." Teachers, colleagues, and husband, each voice echoes in my mind. Some couples approach gardening in a more casual fashion, not relying on a formalized plan. My colleague Cheryl Monroe and her husband Thomas, both horticulturists, plan each year for the next, by making lists. As each growing season progresses they write down which plant combinations work, which don't and an ever popular "to be moved" list. Cheryl believes gardens are living and changing environments and that no garden plan should be set in concrete. Maybe not in concrete, but Tom and I decided paper was a good place to start. The art of list making seemed to lend itself to established gardens, and we were starting from scratch.

Once you have measured the space available in your garden take special note of the exposure. Often you will find both shady and sunny spots available. Depending on the plants you'd like to grow, situate planting beds where you will get the full sun or partial shade these plants will need.

Also think about the functions you'd like to incorporate into your backyard. Sheds, patios, pools, and fences are hardscape items that might eat up a lot of leftover space. Are there views of neighbors you'd like to block or perhaps incorporate into your plan? Locating these items on paper will begin to fill in your garden plan. If you are dealing with a small backyard, the leftover space will be limited, and compromise with your gardening partner will be that much easier. By planning first, you minimize relocating plants. Plant a shade tree next to where the patio will someday be, not in the middle of that space.

Discuss the feel you want to create in the garden, the style the garden will have.

Fortunately, Tom and I have a corner shaded by a neighbor's tree where Tom can cultivate his favorite native woodland plants. There is also a sunny 40-ft. border, which provides plenty of space for my collecting habit. Integrating these diverse areas of a garden can be a challenge. Planning first with paper and pencil forces you to think through your desires, your needs and your plan of attack. We found that meandering pathways and the repetition of plant and building materials were

elements that gave the garden a unified appearance. Whether you develop a plan or write a list, you and your partner can avoid conflict and reduce work if you share ideas before you dig in.

Now that you've thought about a plan, read about a planning competition. You have a year to work on it.

Kathleen Mills, a Pennsylvania Horticultural Society horticulturist, welcomes your suggestions for future columns.

Well Planned Gardens: An Exhibit of Creative Home Garden Designs

Enter PHS's new contest and show off your garden. If you have a vegetable or flower garden you are proud of, or a sitting garden, deck or patio — share your landscaping victory with gardening friends.

Prizes will be awarded in both professional and amateur divisions of the following categories:

- Vegetable Garden
- Flower Garden
- Patio/Deck/Sitting Garden
- Garden with a Water Feature

Landscape architects, designers and horticulturists are encouraged to enter the professional division of the contest.

IMPORTANT DATES:

Entry deadline May 14, 1993
Exhibit dates June 4 - September 3, 1993

To enter the contest please include *each* of the following items for each entry:

- 1 — A plan of the area to be judged. This plan need not be to scale and may be no larger than 20" x 30". The plan should be matted or framed and ready for hanging. It may be as simple or as complex as you like, but the plan must be a good representation of the plants and their position in the garden.
- 2 — A list of all plants in the garden. Latin names are beneficial, but not necessary. The list should fit on an 8½" x 11" sheet and should be matted or framed and ready for hanging.
- 3 — A short written interpretation that describes the intent of the garden design and the purpose/function of the garden space. This should be no more than fifty (50) words typed or printed on paper no larger than 8½" x 11", matted or framed and ready for hanging.
- 4 — Include at least one, and no more than three, color photographs of the garden. They should be matted or framed and ready for hanging. The photo may be no larger than 10" x 14", including matting and/or framing.

Mark the back with the entrant's name, address, daytime phone number, contest category and "Amateur" or "Professional."

RULES

Entries limited to one in each category.

Only individual residential gardens may be entered. Entries may not be of a commercial or business site.

Send entries to Pennsylvania Horticultural Society, 325 Walnut Street, Philadelphia, PA 19106. All winning entries will be on exhibit there from June 4 through September 3, 1993. Other entries will be hung as space permits.

PHS is not responsible for entries not claimed by September 10, 1993.

Judging will be based on the following point scale:

- 50 points — Design
- 30 points — Intent
- 20 points — Presentation

A GARDEN FOR MISS FRANKLIN

 by Carol Fletcher Daniels

Last summer Miss Franklin had a garden. A colorful, blooming garden. It was a gift from my children and me.

The idea of planting a garden for this dear 94-year-old woman grew as naturally as our friendship. Maybe that's because friendship so often goes hand in hand with flowers. Maybe it's that gardens express the lovelier side of human nature. Whatever the reason, a garden came to life.

When we first met two summers ago, Miss Franklin's patio was surrounded by a tangle of weeds. She explained that it had been a long time since the man who'd done the gardening had come around. While her forsythia and daffodils continued to bloom

No-maintenance gardens are as rare as no-maintenance friendships.

in yellow profusion each spring, she had given up hope of having a garden the rest of the year. That's all I needed to hear. The wheels started to turn.

"What do we live for if it is not to make life less difficult for each other." This quotation by George Eliot hangs on our refrigerator, and it's a lesson I teach my children. My hands came with green thumbs, as did my mother's, and her mother's. I hope my children's thumbs will prove a little green as well.

As far as the actual gardening went, I did most of the work. Matthew, Sarah, and Ben provided the entertainment. Sure, they hauled tools and watered plants, but it was usually a matter of minutes before they were inside visiting, while I worked outside. Fortunately, Miss Franklin is a natural with children. A gentle, cheerful, and remarkably patient woman, she is tickled by the antics of youth.

For Miss Franklin's sake, and that of our friendship, I rarely took all three at the same time. One at a time was the general



photo by Carol Fletcher Daniels

The generations come together as Rachel Franklin and Matthew Daniels, the author's son, work shoulder to shoulder in the tiny garden.

rule. Two of mine are non-stop talkers. Even so, it was a fair trade. Miss Franklin enjoyed brief bursts of activity and chatter in an otherwise quiet life. I savored a few moments of peace and the pleasure of watching the two ends of life's spectrum delight in one another's company.

All in all, gardening for Miss Franklin was a two-way street. As I edged the flower beds and deadheaded the marigolds, she played with my children. She shared her games and her hobby of making stained-glass ornaments. My kids knew they were in for a treat when Miss Franklin heated up her soldering iron. Our kitchen window sparkles with the reds, blues, greens, and yellows of their labors.

If it sounds like gardening was an excuse to visit Miss Franklin, well there might be some truth to that. The garden grew in bits and pieces, like our friendship. First an attack on the weeds. Then some hosta from our yard. A new edge to keep the grass at bay. Marigolds: Miss Franklin's one request. Pink periwinkle, a pleasant contrast to

lemon-yellow marigolds and sure performers against a hot brick wall. Old geraniums that had languished inside their owner's apartment bloomed anew when they were planted outdoors. Shrubs were pruned, chrysanthemums pinched. In between were many trips to water during the unusually hot, dry start of the season.

Then there was the leaf mulch — lots of it. One evening Dad joined us, and mulching Miss Franklin's garden became a family outing. The mulch, like our labor, was free, a product of our township's recycling program.

Miss Franklin insisted on paying for the flowers we had purchased. That was fine with us. No one likes to spend too much time on the receiving end of things. Occasional lunches at McDonald's and Friendly's were on her.

Giving the gift of a garden involves much more than putting plants in the ground. The giver makes a commitment to maintain the garden for someone who is unable to care for it. No-maintenance

gardens are as rare as no-maintenance friendships. Both are worth the time and effort it takes to keep them at their best.

And although Miss Franklin would deny it, we received as much from her as she did from us. She wouldn't like to hear it said, but Rachel Franklin is a gem — a find as lovely as any garden that we might ever happen upon.

•

Carol Fletcher Daniels is a free-lance writer and illustrator. She has a B.S. degree in zoology from Duke University and is a part-time student of horticulture at Temple University, Ambler Campus. She lives with her family in Ambler.

Rachel Franklin is a lifelong resident of the Philadelphia area. She was awarded a scholarship to Vassar where she earned a B.S. degree in physics. Her career as a physicist spanned an early five-year teaching assignment in China to eventual employment at the Franklin Institute from which she retired. She now lives in Fort Washington.

CLASSIFIED ADS

DEER PROOF PLANTS

HAVE BEAUTIFUL LANDSCAPES
AND YOUR WILDLIFE, TOO

We grow plants resistant to damage by deer. Now your landscapes can be varied, beautiful, and you can live with the Deer, too!

CONTACT US

HILDEBRANT NURSERIES

OLDWICK NJ

" ESTABLISHED 1923 "

908-439-2256

THE CLASSIC LOOK OF A GARDEN

Designed for today's lifestyle.

Plantings, Rock and Boulder Work, Artificial Ledges and Waterfalls. Designed, installed and warranted exclusively by E.G. WITOMSKI CO.

Since 1976.

Inquire (215) 565-8826

GORDON EADIE

LANDSCAPE ASSOCIATES, INC.

LANDSCAPE & CONSTRUCTION

VALLEY FORGE, PA

(215) 933-4410

EVERY DAY IS EARTH DAY WITH US

SENSITIVITY TO

ECOLOGICAL PROBLEM AREAS

Philadelphia Flower Show Exhibitor — Awards every year. 36 acres of plant material — specimen and landscape quality. Five designers on staff to develop customized landscapes. Efficient, experience landscape, construction, masonry crews.

WE CULTIVATE PERSONAL SERVICE

PENNSYLVANIA'S BEST

Oak Bark Mulch — Dark, Fine Shredded. Picked up or delivered in bulk. Mushroom Soil & Topsoil also available.

(215) 483-8922

(215) 482-1711



WOODLANDERS

RARELY OFFERED DIXIE NATIVES AND INTRODUCTIONS, woody herbaceous, all nursery-grown. Many hardy northward. Send \$1.00 for mail-order list.

WOODLANDERS GS.

1128 Colleton Ave., Aiken, SC 29801.

AFRICAN VIOLETS & GESNERIADS

America's Finest — WRITE for 1991 catalog and tips, 50¢. VISIT our lovely greenhouses. FISCHER GREENHOUSES, Poplar Ave., Linwood, NJ 08221 (609) 927-3399. Open daily, incl. Sunday.

Williamsburg Swags, Kissing Balls, Herbal Wreaths, Unique Gifts.

Boxwood trees. Herbal gift basket including plants, book, potpourri and delicious herb dips and teas trimmed for your holiday giving. Call to order.

Special: Bay Plant \$4.99!

We grow our own beautiful Christmas Trees. Visit our plant loft for fresh herb plants, beautiful bayleaf, jasmine, sweet olive. Many unusual and hard-to-find plants. Stephanotis, citrus trees.

Christmas Open House

November 30 and December 1

Triple Oaks Nursery and Florist

Route 47 Delsea Drive

Franklinville, NJ 08322

609-694-4272

OPEN 7 DAYS

Less than 45 minutes from Center City Philadelphia. Walt Whitman Bridge to Rte 42; Rt 55 to Exit 43. Left to Rte 47; Right on 47 1 1/2 miles.

ADVERTISE IN GREEN SCENE

Green Scene circulation is increasing. You can now reach more than 13,900 people with your horticultural message.

Green Scene advertising rates are modest — \$6.50 per line, minimum rate \$22.00. Advertise in two or more consecutive issues using the same copy and take a 10% discount!

Contact Joseph Robinson, Green Scene, 325 Walnut Street, Philadelphia, PA 19106-2777.

continued

LIGHTING BY FILLMAN

Specializing in
LANDSCAPE • GARDEN • DECORATIVE
Lighting
DESIGN • INSTALLATION • SERVICE
Also — Patios • Decks • Driveways • Walks
G. LYNN FILLMAN (215) 766-7645

THE UNIQUE BEAUTY OF ORNAMENTAL TREES

Dealers and locators of large, mature standard and rare plant material, including arboretum-quality specimens, serving landscape architects, designers, contractors, and private individuals.

Our services also include:

- planting and transplanting of large trees
- assessing and renovating mature collection and estate gardens
- we will purchase large trees.

TREE TRANSFERS INC.
(215) 635-2310

Outdoor Furniture Specialists Hill Co.

Create an exciting outdoor living area with a visit to the Hill Co. Distinguished collection of outdoor furniture and accessories, wicker, and rattan. Showrooms fully stocked year round.

(215) 247-7600
8615 Germantown Ave.
Chestnut Hill

Consider the Winter Garden

The outdoor room is as much architecture as it is garden. The courtyard is the most familiar and oldest type of outdoor room. Today, however, the garden is often separate, like an annex to interior living space. The **Garden Architecture Group** builds aesthetic frameworks for the garden that form a total living space where house and garden merge . . . Trellis, pergolas, columns, arches, antique urns, gates, custom topiaries and other architectural elements. **Brian Foster**, 631 N. 3rd St., Philadelphia, PA 19123. (215) 627-5552. Hours by appointment.

NURSERIES! GARDEN CENTERS!

Green Scene, the bimonthly magazine of the Pennsylvania Horticultural Society, is available now as an over-the-counter sales item. For details on discounts call or write Joe Robinson at PHS, 325 Walnut Street, Philadelphia, PA 19106-2777 (215) 625-8280.

REED'S WOODS QUALITY WORK AT A FAIR PRICE

Springhouse Restorations
Additions/Renovations
Decks, Flagstone, Brickwork
Carpentry & Landscape Structures
Call for Free Estimate
76-A Bodine Road
Malvern, PA 19355
(215) 827-9663

DISTINCTIVE PENNSYLVANIA GROWN PLANTS

for gardening and landscaping. Many scarce, rare and unusual selections along with hardy natives available. Call or write for FREE catalog.

APPALACHIAN GARDENS
P.O. Box 82
Waynesboro, PA 17268-0082
(717) 762-4312

CONTEMPORARY STRUCTURES FOR HOME AND GARDEN

At last! Great new designs for those garden necessities. Arbors, Trellises & Gates, built in steel to last. Write or call for catalog.

The Painted Garden, Inc.
304 Edge Hill Road
Glenside, PA 19038
(215) 884-7378

The Philadelphia Flower Show.
Landscape Design and Planning.
Installation and Renovation.

For the Country Garden
Herbs from the Finest Growers
Over 100 Varieties

The Best Plants Featuring
The Styer Award Winners
Garden Accessories and Necessities

Lead Stone Terra-Cotta
Tools to Last a Lifetime
Water Gardening Pool Supplies Books
Bonsai Tools Pottery Plants
Shade Color Fragrance
Experience the Pleasure of Gardening

J. Franklin Styer Nurseries

Since 1890
Celebrating 100 Years in Horticulture
Open Seven Days A Week
459-2400



LINDA CORSON LANDSCAPE DESIGN

- Consulting
- Plans
- Supervision

Member ASLA
Registered Landscape Architect
215-247-5619

COX & CO., INC.

Tree and Landscape Services.
Tree preservation, planting, removals.
(215) 687-1780
Nursery: 15 Airport Rd., Limerick, Pa 19468

David Brothers BEAN ROAD NURSERY

Landscape Architects, Builders
and Nurserymen
Providing the Fine Art of Garden Construction
and Landscape Restoration
QUALITY SERVICE WITH COURTESY
AND RELIABILITY
EDGAR and KIM DAVID
247-2992 584-1550

MONTGOMERY'S CHRISTMAS WONDERLAND 1991

Montgomery's welcomes you to visit our 1991 Christmas Wonderland staged in our renovated Chester County barn and 20-acre nursery in lovely Chester Springs, Pa. A unique family Christmas awaits you — come enjoy a free cup of hot wassail as you browse through our fabulously decorated two-hundred-year-old barn filled with imaginative gifts and decorating ideas from around the world. Your children will enjoy visiting our stable of live farm animals and meeting Santa in person while you select your perfect Christmas tree, wreaths, roping and greens from our Evergreen Forests. No Christmas is complete without Montgomery's traditional hanging Poinsettia Basket from our Christmas greenhouses.

Come early this season; we guarantee you'll come back again and again!

The Philadelphia Flower Show's 5-time "Best in Show" Winner

ROBERT W. MONTGOMERY LANDSCAPE NURSERY

Our Only Location:
Route 113, Chester Springs, PA
363-2477
Open 7 Days a Week

HOSTAS FOR CHRISTMAS

Give a collection of 5 quality Hostas all labeled, all different, delivered next spring. Recipients will receive a special Christmas card describing the gift. \$35 postpaid. Send check to: **Everlasting Bouquets & Herbs**, P.O. Box 176, Odessa, DE 19730-0176 (302) 378-2829.

MEADOWBROOK FARM 1633 Washington Lane Meadowbrook, PA 19046

887-5900 Mon-Sat 10-5

AN ENCHANTING EXPERIENCE

awaits you in our gardens and greenhouses. Choose from lovely geraniums, beautiful annuals, thousands of perennials and flowering and evergreen shrubs that are perfect for sunny, shaded or groundcover areas. Accent your garden with rare plants, topiaries, fountains, statuary or beautifully planted patio pots. Unique gifts and baskets of blooming plants are our specialty.

For The Better Things In Gardening
MEADOWBROOK FARM

GREENHOUSE CONSTRUCTION Sales and Service

Janco, Lord & Burnham and more.
Call Robert J. LaRouche at
Glass Enclosures Unlimited
228 Poplar Avenue
Wayne, PA 19087
(215) 687-2444

GRACIE'S NEW AGE EATERY & 21ST CENTURY CAFE

Healthy Food in a Nourishing Environment
Reservations now accepted for:
Private, intimate parties
Small weddings
Luncheons for groups by appointment
MANATAWNY ROAD, PINE FORGE, PA 19548
(215) 323-4004 Wednesday through Saturday

A GARDENER'S DELIGHT

This 6 BR French Country Home is cloaked in privacy and surrounded by well established, manageable perennial gardens and specialty plantings, located in prestigious W. Mt. Airy. Emlen Wheeler Realtors — Helene Emlen 215-542-8033

B&B on Burpee Family Estate

Historic Fordhook Farm, home of pioneering seedsman, W. Atlee Burpee, is open to the public as a Bed and Breakfast Inn. Reserve for Flower Show Week now. The Inn at Fordhook Farm, Bucks County, Pennsylvania (215) 345-1766.

WONDERFUL SPEAKERS. WORKSHOPS. TOURS.

ALL ARE INVITED to the 1992 National Council of State Garden Clubs, Inc. convention, May 18-20, 1992. For details, send SASE to Sandy Manthorpe, Chair, 101 W. Rose Tree Road, Media, PA 19063.

OVER 2,000 KINDS of choice and affordable plants. Outstanding ornamentals, American natives, perennials, rare conifers, pre-bonsai, wildlife plants, much more. Description catalog, \$3. FORESTFARM, 990 Tetherow Rd., Williams, OR 97544.

Bamboo Fencer

Let the Bamboo Fencer create for you custom-designed fencing, gateways, fountains or other structures of bamboo for your garden and home. Beautiful as sculpture, rugged and versatile, bamboo is an "Earth kind" delightful alternative. We build and install or ship to your site. Cat. \$2 (Refundable).

Bamboo Fencer, 31 Germania St.
Jamaica Plain, MA 02130
(617) 524-6137, FAX (617) 524-3596

THE INN WHERE THE GUESTS make all the arrangements... with flowers. A 2-day seminar on basic flower arranging with lots of "hands-on" experience plus a stay at a classic Vermont Country Inn equals a great weekend. For information call or write:

The Inn at Pittsfield
Route 100 Box 675 GS
Pittsfield, VT 05762
(802) 746-8943

BUSINESS OPPORTUNITY

Prime Bucks County Real Estate, perfect for ecological landscape business plus retail sales of environmentally friendly garden products, seeds, plants, English garden tools, etc. Historic 3-story stone general store, beautiful stone farmhouse, large bank barn, other outbuildings, all on 12.5 acres, open and sunny, and chemical free since 1983. Bucolic perfection on main road, in the center of rapidly developing upscale residential areas near Newtown and New Hope. Currently used as two antique shops and residence. Moving out of state, will sacrifice for \$575,000. Call owners (215) 598-7433. Tax credits available.

ARCHITECTURE, SITE PLANNING GARDEN DESIGN

Todd R. Phillippi, AIA

Complete commercial and residential design services.

1325 Old Lincoln Hwy., Langhorne, PA 19047
(215) 750-8770

AFRICAN VIOLETS

100 varieties, standard, micromini, miniature, trailers, variegated types. Greenhouses open daily. Cultural book, \$6.95 ppd. Color catalog 50¢. TINARI GREENHOUSES, 2325 Valley Road, Huntingdon Valley, PA 19006 (215) 947-0144

GARDEN DESIGN — Design and installation of specialty gardens including perennial borders, herb, kitchen and English cottage gardens. **CAROL MANICONE** (215) 348-4830.

DISCOVER YOUR HIDDEN GARDEN

Low-voltage lighting systems for your garden, deck, patio, pool, spa or greenhouse.

- safe, reasonably priced and economical to operate
- installation does not disrupt existing plantings

Call (215) 376-1181 or 374-2036 for a no-obligation consultation and price estimate.

THE LANDSCAPE LIGHTING COMPANY

AMERICAN GREENHOUSE SYSTEMS

- Maintenance on ALL greenhouses — IBG, Janco, L&B, Rough, National, etc.
 - Refurbishing older greenhouses
 - Sales of Poly, Lexan and Glass Enclosures
 - Redwood and Aluminum Solariums and Conservatories
 - Yearly Maintenance Contracts
- P.O. Box 817 Malaga New Jersey 08328
(609) 694-3500 FAX (609) 694-1840
(800) 676-3505

JAMES FARR

LANDSCAPE CONSTRUCTION

- Planting and masonry design/installation
- Pools, waterfalls, drainage systems, Japanese gardens, traditional/contemporary gardens, etc.

(215) 884-1720

Plants for Sale

- *Sciadopitys verticillata* — approx 14 ft., \$2,800
 - *Acer palmatum dissectum* 'Atropurpureum' 10-12 ft., \$3,200
 - *Pinus bungeana* — 12-14 ft., \$1,200
- Many other plants available!

James Farr
(215) 884-1720

LARGEST SELECTION OF RHODODENDRONS & AZALEAS

on the East Coast with many new varieties. Also Kalmia, Pieris, and many companion plants. Mail order catalog, \$2. **ROSLYN NURSERY**, Dept GS, Box 69, Roslyn, NY 11576.

FALL PLANTING

We are digging conifers

Yew, Juniper, Pine, Hemlock, Fir, Spruce

FOR CHRISTMAS

Select now your balled and burlapped trees for Christmas from thousands of sheared Colorado Spruce, Douglas Fir, White Pine, Fraser Fir, Concolor Fir. We'll hold them for Christmas pickup.

Please call for an appointment to select your stock and/or to receive our complete list of stock and prices.

AND — VISIT US AFTER THANKSGIVING!
Opening November 30 through December 22 every day except Mondays from 9 am to 4 pm. Pre-cut or choose-and-cut Douglas, Spruce, Fraser Fir, White Pine, Concolor Fir. For **pre-cut trees**, we'll stay open to 8 pm on Fridays and Saturdays.

Be selective and proud of your tree. You surely will be if it's a **SHANAHAN-GROWN CHRISTMAS TREE**. Award winners at state and national competitions. Est. 1965.

SHANAHAN'S TREE FARMS & NURSERIES

R.D. 2, Box 73B
Honey Brook, PA 19344
(215) 273-3318

THE PERFECT HOLIDAY GIFT? IT'S THE "WEEDER'S DIGEST!"

GREENPRINTS shares gardening's wit, wisdom, humor, and heart — with fine prose and fine art. "An utter joy to read!" \$13 a year. **GREENPRINTS**, P.O. Box 1355GS, Fairview, NC 28730.

THE ULTIMATE HOLIDAY WONDERLAND FOR ALL AGES:

Experience the Magic...
of "A Beary Merry Holiday"
another exclusive animated display
to enchant the whole family
at **WATERLOO GARDENS**, Exton

HOLIDAY PREVIEW NOV. 2 & 3, Sat. & Sun.
Thousands of usual & unusual Poinsettias,
Cyclamen, Jerusalem Cherries, Ornamental
Peppers, Orchids, Bonsai, Topiaries, and
Culinary Herb Plants.

Cut, live and permanent trees.
Wreaths, greens and garlands.

Plus beautiful themed trees to inspire you.

Unique Tree Ornaments:

Art Glass • Hand-Painted • Silver • Crystal
Brass • Porcelain • Papier Mache

Christmas Collectibles from around the World:
Ulbricht, Steinbach & German Nutcrackers
& Smokers • German Pyramids • Nativities
Duncan Royale Santas and Clowns
Russian Nesting Dolls • Byers' Choice Carolers
Lasting Endearments • Collectible Santas
Dept. 56 Collectible Lighted Houses
& Accessories

(Largest selection in Delaware Valley)

— **Waterloo Gardens** —

Two Locations — Open 7 Days a Week

Exton — 200 N. Whitford Rd. (215) 363-0800
Devon — 136 Lancaster Ave. (215) 293-0800

Celosia and gomphrena,
everlastings were a great
adventure — for a while —
in the fickle gardener's
changing landscape.
See page 22.



GREEN SCENE

THE MAGAZINE OF THE PENNSYLVANIA HORTICULTURAL SOCIETY • JAN./FEB. 1992 • \$2.00



Snowflowers:

The Christmas rose (*Helleborus niger*)

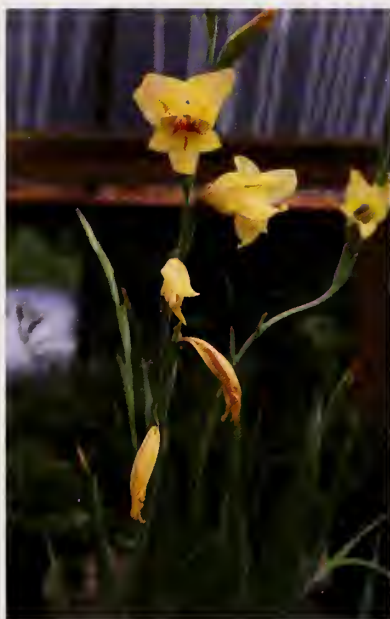
See page 28



11



20



26

Front Cover: *Helleborus niger* (the Christmas rose) blooms in late February, early March in a Chadds Ford (Pa.) garden. See page 28.
Front Cover: Photo by Mary Lou Wolfe
Back Cover: Photo by Larry Albee



in this issue

3. 1992 Winners of The Pennsylvania Horticultural Society Gold Medal Plant Award
Paul W. Meyer

11. Storm Warnings
Julie Morris

16. Salvias
Joanna McQ. Reed

20. Tales from the Wissahickon
Bea Weidner

23. Poison Ivy, a Bane for All Seasons
Carol Fletcher Daniels

26. Center for Historic Plant Research
Patricia A. Taylor

28. Snowflowers
Toni Brinton

30. Plant Societies' Meetings 1992
Carol Lukens

32. Winter Gardens
Kathleen Mills

33. Plant Finder

34. Classified Advertising

CORRECTION—

Sources of Information, p. 7 at the end of "Richard Both's South African Garden" by Bonnie Swan, *Green Scene*, Nov./Dec. 1991.

Indigenous Bulb Growers
 Association of South Africa
 3 The Bend 3
 Edgemead 7441
 Cape Town
 Republic of South Africa

Volume 20, Number 3 January/February 1992

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Monday through Friday 9:30am to 12 Noon (Hotline is closed in December)

Donald L. Felley / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

Joseph P. Robinson / *Editorial Assistant*

Carol C. Lukens / *Editorial Assistant*

PUBLICATIONS COMMITTEE:

Anne S. Cunningham / *Chair*

Kathryn S. Andersen

Walter G. Chandoha

Charles W. Heuser

Gene Jackson

Anthony A. Lyle

Robert McCracken Peck

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendells' Graphic

Membership Information: Linda Davis, 625-8265

Printer: Howard Printing

The *GREEN SCENE*, (USPS 955580), Volume 20, No. 3, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$9.75—Single Copy: \$2.00. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE *GREEN SCENE*, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1992

Green Scene subscriptions are part of the membership benefits for:

Blithewold Gardens and Arboretum, Bristol, Rhode Island

Botanical Garden at Asheville, North Carolina

Cox Arboretum, Dayton, Ohio

Frelinghuysen Arboretum, Morristown, New Jersey

Hershey Gardens of Hershey, Pennsylvania

Maryland Horticultural Society, Baltimore, Maryland

Pennsylvania Horticultural Society, Philadelphia, Pennsylvania

Phipps Friends, Pittsburgh, Pennsylvania

Staten Island Botanical Garden, Inc., New York

***Green Scene* welcomes a group of members of
 The San Antonio Botanical Gardens
 as new subscribers.**



1992 WINNERS OF THE PENNSYLVANIA HORTICULTURAL SOCIETY GOLD MEDAL PLANT AWARD



by Paul W. Meyer

Set your sights on these winners for your garden: a clematis with small, smoky-blue, bell-shaped flowers; a hawthorn with brilliant orange-red fruits; a deciduous magnolia with red-purple blooms or another that is hardy and evergreen; an oriental spruce with lush green foliage; and a small viburnum with luxuriant snowball flowers.

Each January The Pennsylvania Horticultural Society recognizes a group of outstanding trees and shrubs with its Gold Medal Plant Awards. Award winners are little known or underused woody ornamentals of exceptional merit. Dr. J. Franklin Styer (see inset) conceived this program in the 1970s to address the relative lack of diversity in garden plantings. Including this year's Award winners, 30 exceptional garden plants have been recognized since 1988.

The Award's purpose is to promote a rich palette of trees and shrubs for area landscapes, and the Gold Medal Plant Award Committee and The Pennsylvania Horticultural Society have worked behind the scenes with nursery people and retailers to increase the availability of these fine garden plants.

The following are the 1992 Award winners. They have been selected by a panel of experts representing public gardens, commercial nurseries, landscapers and home gardeners. I encourage you to include one or more of these plants in your garden plans for the coming spring.

continued



Clematis viticella 'Betty Corning' photographed at the Hockessin, Delaware, garden of William H. Frederick, Jr., in June. 'Betty Corning' will rebloom during the summer, often into early fall.

photo by Larry Albee

Clematis viticella 'Betty Corning'

photo by William H. Frederick, Jr.



Clematis 'Betty Corning' photographed in June at Hockessin, Delaware.

Clematis viticella 'Betty Corning'

Vines are relatively neglected by American gardeners, but can add a rich variety of interest to even the smallest garden space. In my travels through the British Isles, I am

often amazed by the impact a single vine can have on a tiny urban garden, dooryard planting or in an otherwise bleak alleyway.

Clematis are an especially useful group of flowering landscape vines and 'Betty

Corning' clematis is a tough, up-and-coming favorite. It has abundant, smoky-blue flowers in late spring, that are followed by significant rebloom throughout the summer and into early autumn. Richard W. Lighty, director of the Mt. Cuba Center for the Study of Piedmont Flora, believes the small blooms are more suitable for modern gardens than the flamboyant, large-flowered cultivars of yesteryear. He particularly likes the effect of contrasting the smoky-blue flowers against a tan natural stone wall or a grey weathered wooden fence. Judy Zuk, president of Brooklyn Botanic Garden, allows it to scramble over an unclipped yew, where the blue flowers are particularly striking against the dark green foliage.

Like most clematis, 'Betty Corning' grows well in rich, moist but well-drained, slightly alkaline soils. It is a vigorous grower, performing best with some protection from the hot, afternoon sun. Landscape architect and horticulturist William H. Frederick Jr. is enthusiastic about its tough, adaptable constitution. He grows it successfully on a dark, dry north-facing wall. Early each spring, he prunes it back to 4-5 ft. to induce fresh vigorous growth.

Performs best in Zone 5 to Zone 7.

4

photo by William H. Frederick, Jr.



Crataegus viridis 'Winter King'

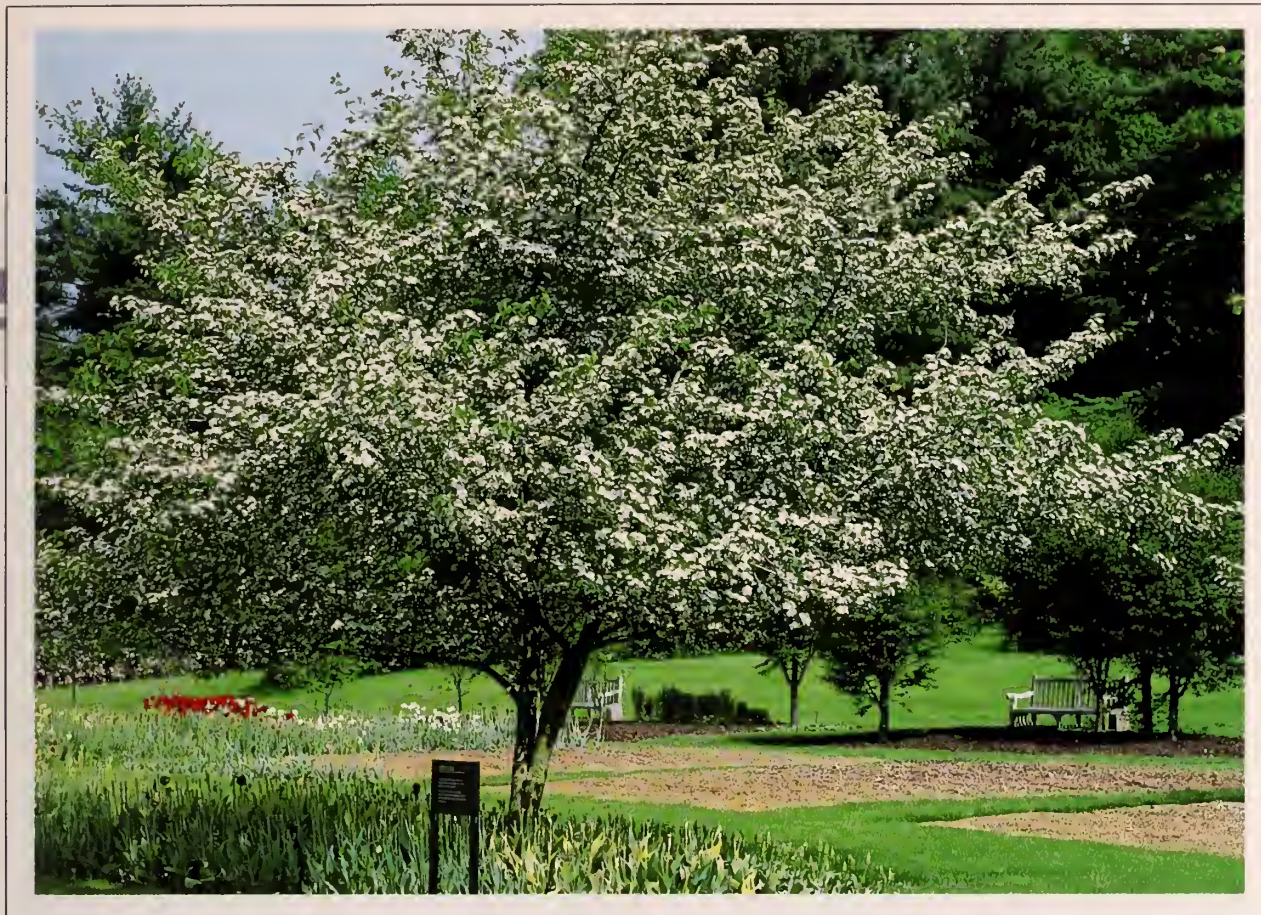


photo by Larry Albee

Crataegus viridis 'Winter King' photographed at Longwood Gardens in May. (See back cover for close-up of blossoms.)

Crataegus viridis 'Winter King'

This outstanding small hawthorn (30 ft. x 30 ft.) has been widely planted since the mid-1970s in the Midwest, but just now is becoming popular in the Delaware Valley. Though this tree is attractive year-round, it is particularly valued for its orange-red fruits which are set off by the silver-grey bark. The fruits are particularly attractive against a dark-green background, lasting into February, then providing welcome meals for hungry cedar waxwings migrating northward. A cluster of three flat-topped plants growing in the Morris Arboretum is quickly becoming the winter focal point of the English Park.

'Winter King' hawthorn is tolerant of a wide range of soils; it flowers and fruits best in full sun. It is relatively resistant to the fungal rust problems that frequently plague other hawthorns. Philip Normandy, curator of Brookside Botanic Garden, notes that this is a great "35-mile-per-hour tree," eye-catching even when seen from a passing car.

'Winter King' hawthorn is usually propagated by bud grafts on to Washington hawthorn rootstock.

Performs best in Zone 5 to Zone 8.

continued

Dr. J. Franklin Styer **Originator of Gold Medal Plant Award**

Dr. J. Franklin Styer has devoted his life to the advancement of horticulture in the broadest sense, as a researcher, plant breeder, nurseryman and visionary. He has worked with various members of the horticultural community and supported The Pennsylvania Horticultural Society, serving on its Council and as treasurer. In 1978 he set out to investigate the legion of exceptional but little known woody ornamental plants, certify their worth and tell the world. He conceived an Award to recognize and promote plants with great garden merit and approached The Pennsylvania Horticultural Society to administer such an Award. Thus began The Pennsylvania Horticultural Society's Styer Award of Garden Merit.

Dr. Styer provided the grant to establish this Award and in January 1988, after many years of evaluation, six outstanding plants were selected to receive the first Styer awards. In 1990, we changed the program's name to the Gold Medal Plant Award. The program still carries Dr. Styer's vision, and the name change assists in the promotion of Award winners by helping those not familiar with the program grasp the Award's intent and the value of these Award-winning woody plants.

Throughout Dr. Styer's lifetime he has been active also in the expansion of the Pennsylvania Nurserymen's Association. He helped lay the ground for the formulation of the International Code of Nomenclature for Cultivated Plants, and participated with the committee that led to the formation of the American Association for Botanical Gardens and Arboreta in 1940. In 1988 Dr. Styer was the recipient of the Arthur Hoyt Scott Garden & Horticulture Award in recognition for his outstanding contributions to the science and art of gardening.

Dr. Styer has endowed The J. Franklin Styer Professorship of Horticultural Botany at Pennsylvania State University.

He now lives in Bend, Oregon.

Magnolia x 'Galaxy'

photo by Larry Albee



Photographed at The Scott Arboretum of Swarthmore College in April.

photo by Larry Albee



Summer foliage (photographed in July).

Magnolia x 'Galaxy'

Magnolia 'Galaxy,' a U.S. National Arboretum introduction was selected from a cross of *Magnolia liliflora* 'Nigra' and *M. sprengeri* 'Diva.' It has a strong upright central leader, and an upright pyramidal habit. Richard Hesselein, of Princeton Nursery, believes it has potential as a street tree that won't become too large for urban spaces.

In mid-April, *Magnolia* 'Galaxy' bears a profusion of large, deep red-purple blossoms. Since it blooms later than most magnolias, it is more likely to escape late spring frosts. At the Morris Arboretum it has been fast growing, often putting on over 3 ft. of growth in one year ultimately reaching a height of 20 ft. to 30 ft. It is best grown in full sun or light shade. Like most magnolias, it is adapted to most well-drained soils.

It is easily propagated by semi-hardwood cuttings, rooted under mist with .8% IBA treatment (a root stimulant).

Performs best in Zone 6 to Zone 9.

Magnolia grandiflora 'Edith Bogue'

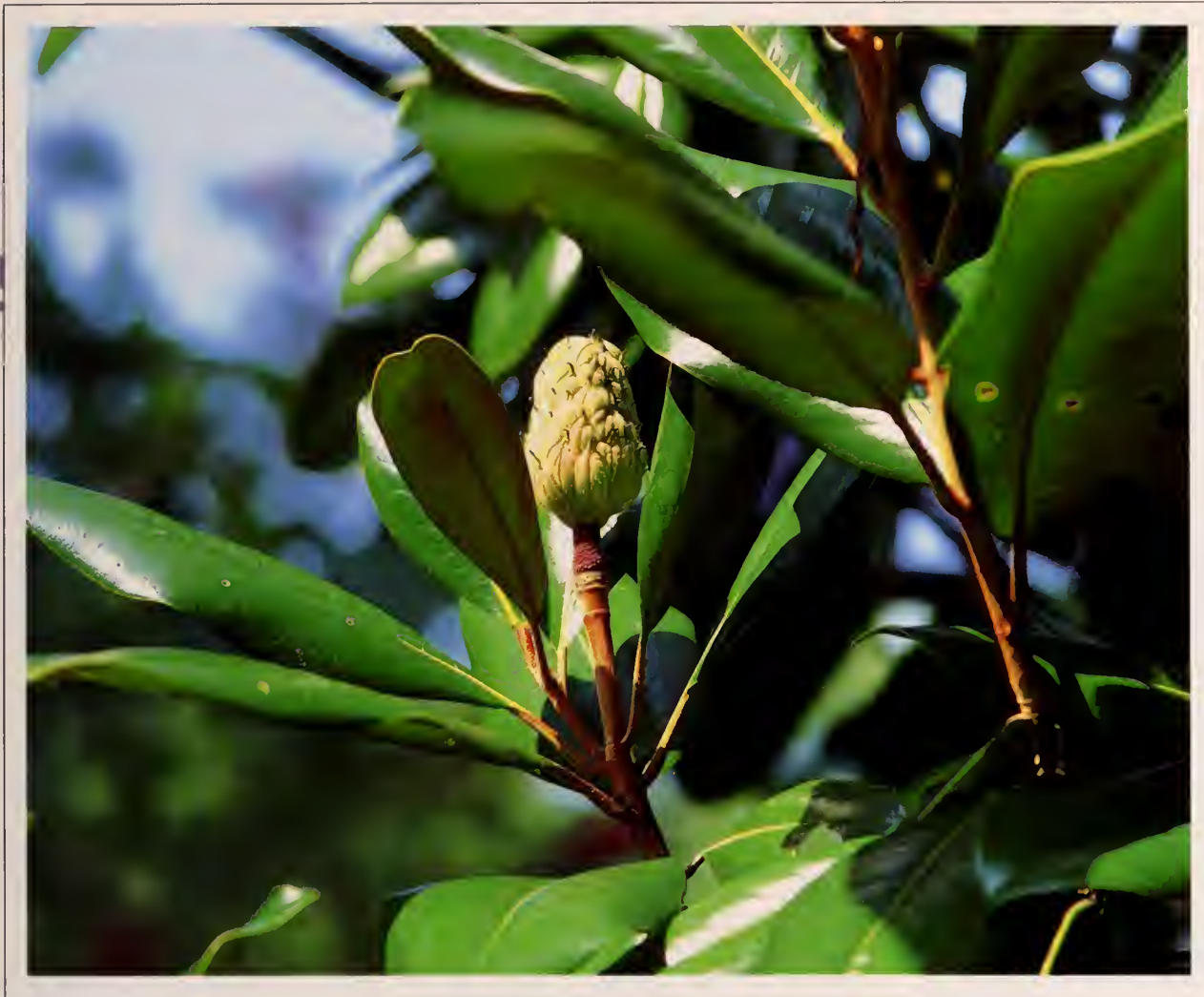


photo by Larry Albee

Evergreen *Magnolia grandiflora* 'Edith Bogue' at Meadowbrook Farm (Pa.) (Top) August (bottom) September.

Magnolia grandiflora 'Edith Bogue'

Southern magnolia is considered by many to be the most beautiful of all North American trees. Native to the deep south, the species has not been reliably hardy in the Delaware Valley. Though tried by many, it is often damaged in severe winters.

One cultivar, 'Edith Bogue,' is recognized as having superior hardiness. It was originally selected from the garden of Edith Bogue of Montclair, New Jersey. Ms. Bogue's magnolia survived a particularly severe winter, while others in the area were severely damaged. It was then propagated and distributed to a few collectors. In 1963, Morris Arboretum director, John Fogg, received plants for the Arboretum collection. The original Morris Arboretum specimen has thrived over the years without winter dieback. Many young plants have been grown from cuttings from this original specimen over the past 15 years. They have



photo by Larry Albee

done well, even in exposed sites. Young plants may be subject to bark splitting, especially if the bark is exposed to the winter sun. Therefore, a burlap sun screen is suggested for small, young plants the first year after planting.

Like the species, 'Edith Bogue' magnolia has fragrant, creamy-white flowers which bloom throughout the summer. Flowers are followed by attractive orange-red fruit. Like all southern magnolias, it has large lustrous, dark-green leaves and can be used as a specimen tree or in mass plantings. It is useful also as an espalier, especially on north walls shaded from the winter sun. In the Philadelphia area, it can reach a height of 40 ft.

Cuttings of 'Edith Bogue' magnolia can be readily rooted July through December with a 3% IBA treatment.

Performs best in Zone 6 to Zone 10.

continued

AWARD WINNERS Gold Medal Plant Award 1988 through 1992

Betula nigra 'Heritage'
Callicarpa dichotoma
Clematis viticella 'Betty Corning'
Cornus sericea 'Silver and Gold'
Crataegus viridis 'Winter King'
Daphne caucasica
Deutzia gracilis 'Nikko'
Fothergilla gardenii 'Blue Mist'
Hamamelis mollis 'Pallida'
Hamamelis x intermedia 'Diane'
Hedera helix 'Buttercup'
Hibiscus syriacus 'Diana'
Hydrangea quercifolia 'Snow Queen'
Hydrangea macrophylla 'Blue Billow'
Ilex 'Sparkleberry' (*Ilex serrata* x *I. verticillata*)
Ilex x 'Harvest Red'
Itea virginica 'Henry's Garnet'
Magnolia 'Elizabeth' (*Magnolia acuminata* x *M. heptapeta*)
Magnolia x 'Galaxy'
Magnolia grandiflora 'Edith Bogue'
Malus 'Donald Wyman'
Malus 'Jewelberry'
Picea orientalis
Prunus 'Okame' (*Prunus incisa* x *P. campanulata*)
Sciadopitys verticillata
Stewartia pseudocamellia koreana
Viburnum x 'Eskimo'
Viburnum nudum 'Winterthur'
Viburnum plicatum f. *tomentosum* 'Shasta'
Zelkova serrata 'Green Vase'

Picea orientalis



photo by Larry Albee

Picea orientalis at The Scott Arboretum of Swarthmore College.

Picea orientalis

In recent years many horticulturists have expressed dismay at the lack of conifers available commercially from nurseries. Though many fine species of pine, spruce, and fir have proven their merit over the decades in many local botanic gardens, they are simply not commercially available as young plants. The Oriental spruce is one outstanding species now becoming more available in the trade.

Unlike most spruces, which suffer in hot, dry weather, the Oriental spruce, a native to Asia Minor, seems to thrive in the most severe Delaware Valley summers. Even after the hot, dry summer of 1991, the short, fine-textured needles of Oriental spruce retained their rich, dark green color.

Area horticulturist Sally Reath reports

that her 18-year-old specimen, growing under high deciduous shade, is approximately 20 feet tall. She particularly enjoys the contrast of the light green new shoots in the spring against the dark green of the older growth. Compared with other spruces, this species is quite shade-tolerant. Because of its shade tolerance, it tends to hold its lower branches much better than the more commonly planted Norway spruce. William H. Frederick Jr. believes that the landscape character of Oriental spruce is in every way superior to the more commonly used Norway spruce. Several 90-year-old plants at the Morris Arboretum stand approximately 90 ft. tall by 25 ft. across.

This species is propagated from seed or grafting.

Performs best in Zone 4 to Zone 7.

Viburnum x 'Eskimo'



photo by Larry Albee

Viburnum 'Eskimo' at Longwood Gardens in May.

Viburnum x 'Eskimo'

The Eskimo viburnum, a hybrid between *Viburnum* x *carlcephalum* 'Cayuga' and *Viburnum* *utile*, was bred by the late Dr. Donald Egolf of the U.S. National Arboretum. At last we have a snowball-flowered viburnum of manageable proportions. As a young plant it has a very neat, uniform form. The original selection measured approximately 4 ft. x 5 ft. after 12 years of growth. It bears masses of white flowers in early to mid-May and has excellent dark, semi-evergreen foliage. Fruit ripens in August to a dull red to black.

Landscape professionals on the Gold Medal committee consider it a potentially important, low-maintenance plant that will be useful in commercial as well as home landscapes. It is widely adaptable to soil and light conditions, but grows best in full sun and in a heavy loam soil with adequate moisture supply.

Plants can be easily propagated under mist by softwood cuttings.

Performs best in Zone 6 to Zone 8.

continued



photo by Larry Albee



Paul W. Meyer is director of Morris Arboretum of the University of Pennsylvania. He is particularly active in the field of plant exploration, evaluation and introduction.



How to Enter a Plant for The Pennsylvania Horticultural Society Gold Medal Plant Award

We hope you and your gardening friends will let The Pennsylvania Horticultural Society know about plants you think merit a Gold Medal Plant Award. To obtain entry forms call PHS at (215) 625-8299.

The schedule for the program is as follows:

December 1 —

Deadline for entrants to submit suggestions with entry form and slides (3-5) to the Society.

January —

Evaluators review entries and select plants for further evaluation in the field during upcoming months.

Summer —

Evaluators meet to make final award selections. Winners are announced in *Green Scene* at the beginning of the following year.

When making recommendations for the Gold Medal Plant Award, please remember the following specifications:

- for each entry, a minimum of three landscape-size plants must be accessible to evaluators in a botanical garden, arboretum or nursery located within 150 miles of Philadelphia, in the area extending from Washington, D.C. to New York City.
- a program of propagation and distribution should be underway for all entries to ensure that plants are available so growers, retailers and mail order sources can obtain stock for distribution.

Where to Buy Pennsylvania Horticultural Society Gold Medal Plant Award Plants

As with all production operations, both wholesale and retail nurseries walk the delicate tightrope between supply and demand. Their situation is further complicated by the long lead-time needed to produce plants large enough to attract demand in the retail nursery.

As part of the Gold Medal Plant Award program, the Society informs those involved in the production and sale of plants in the areas where *Green Scene* readers live about our activities. And we distribute information on the upcoming award winners to the trade.

We hope you will be able to find these plants in your garden centers. If you cannot, a source list is available and can be obtained by sending a stamped, self-addressed business-size envelope to The Pennsylvania Horticultural Society Gold Medal Plant Award, Pennsylvania Horticultural Society, 325 Walnut Street, Philadelphia, PA 19106. Both retail mail order and wholesale sources are included in the list.

EVALUATORS

Paul W. Meyer, **Chair**

Darrel Apps

Tom Dilatush

William H. Frederick, Jr.

Richard Hesselein

William Heyser

Steve Hutton

Richard W. Lighty

Philip Normandy

Sally Reath

Bradshaw Snipes

J. Franklin Styer

Charles Zafonte

Judith D. Zuk

Staff Coordinator

Cheryl Lee Monroe

Ex officio

Jane Pepper, President
Pennsylvania Horticultural
Society

We are grateful to
the following people
for their assistance
with this program:

Kathy Mills, Horticulturist
Pennsylvania
Horticultural Society

Charlotte Slack

Susan P. Wilmerding



STORM WARNINGS

 by Julie Morris

Hundreds of trees at the Morris Arboretum of the University of Pennsylvania in Philadelphia were destroyed or badly damaged this past summer when a six-minute tornado whipped through the Arboretum early in the evening on August 3. Two weeks later, on August 19, Hurricane "Bob" slammed through Blithewold Gardens & Arboretum in Bristol, Rhode Island, after making landfall a few miles southeast of the Arboretum shortly after midday.

The 166-acre Morris Arboretum lost more than 300 trees outright and another 400 were badly damaged. Paul W. Meyer, director of the Morris Arboretum, reports that the cost of clean up, property damage, and tree loss is estimated at over one million dollars. The Arboretum's collection of catalogued woody plants exceeds 6,000. Blithewold Gardens and Arboretum lost a proportionate number of trees on its 33 acres. Forty major trees were lost outright and another 40 or so were badly damaged and may have to be removed. Many more need various sorts of repair.

The aftermath of both storms was similar. Dramatic headlines and extensive television coverage, unusual for public gardens, broadcast the news of the devastation. Staff and volunteers gathered as soon as the storms were over to begin the immense work of cleaning up the damage. There were differences, however, in storm damage and clean-up methods of the two arboreta. The tornado with 100 mph winds that hit the Morris Arboretum was a very local storm affecting a few square miles in suburban Philadelphia. The hurricane that tore through southeastern Rhode Island had come up the coast damaging hundreds of square miles. Arborists in Rhode Island, as well as nearby Massachusetts and Connecticut, had months of work ahead of them.

There was no way to prepare for the tornado. It sprang up suddenly with rain that fell sideways and winds that twisted off the tops of trees well above ground as well as uprooted them. The National

continued

Parts of the native woodland of the Morris Arboretum of the University of Pennsylvania on the slopes above the Wissahickon were completely devastated. Some of these trunks will be left to stand as a memorial to the 1991 tornado.

photo by Paul W. Meyer



photo by Mark Zelonis

At Blithewold Gardens & Arboretum in Bristol, Rhode Island, Hurricane Bob destroyed a linden that fell on a Norway maple, that knocked a spruce on top of a *Chamaecyparis* and holly.

Weather Service reports that on an average a tornado is a once-a-year event in the Delaware Valley. Public gardens have been tornado targets before. A wind storm two years ago cost the Morris Arboretum nearly \$200,000 in property loss, the appraised value of the trees and clean up. Bowman's Hill Wildflower Preserve in Washington Crossing Historic Park (Pa.) lost several hundred trees and scores of wildflower plants uprooted on upended tree root balls when a tornado struck in the spring of 1983.

at Blithewold Gardens and Arboretum

In Rhode Island we knew about 24 hours ahead of time that the storm might directly hit along the coast. A few hours later it became a certainty. Staff members worked during the early evening on August 18, and again starting after dawn, on the 19th to secure Blithewold as best we could. The property includes a 45-room mansion that is open to the public. We flew through a checklist of about two dozen items with everyone's adrenalin on high. The checklist was created as we went along; we now have it on file where it will be changed or added to and kept for future emergencies (far in the future we hope). Anything that

could be moved, tied down or boarded up was, but there was little we could do for the trees.

Hurricane "Gloria" had thrashed through the Arboretum in 1985, with high winds and no rain. Trees were lost and salt severely damaged foliage; we were told "Bob" was far more dangerous. The staff left the Arboretum in mid-morning before bridges closed and all traffic was banned from roads.

Blithewold's director Mark Zelonis, and his wife Sally, live at Blithewold; they watched and listened as the storm uprooted or snapped trees in half and destroyed power lines. Trees fell like dominoes crashing into one another, landing in sodden heaps all over the property.

Both arboreta received substantial assistance from sister institutions. A call from Blithewold to Gary Koller, assistant director for Horticulture at the Arnold Arboretum of Harvard University, near Boston, brought immediate results. Gary talked to Dr. Robert Cook, the Arboretum's director, and Patrick Willoughby, superintendent of grounds. The country's oldest arboretum came to the aid of one of the newest public gardens.

Once we determined that insurance

wouldn't be an issue for the Arnold's crew and their equipment, Pat Willoughby arranged to work at Blithewold for a couple of days with four members of the Grounds Crew: John Olmstead, head arborist; David Moran, arborist; Donald Garrick, gardener; and intern Todd Burns worked for most of a week clearing roadways, pathways and handling much of the large tree damage. They brought the Arboretum's new High Ranger bucket truck and all their own equipment. Blithewold put the crew up in the local Ramada Inn, which also responded to our plight with special room rates.

The crew and Blithewold's staff worked very long hours enabling us to open Friday, following a four-day closing. We also called arborist Jeff Karol in Massachusetts whose own area was not directly affected by the hurricane. Jeff came immediately to repair damage to our *Rosa roxburghii*, the chestnut rose. Our plant is nearly 15 ft. tall and before the hurricane had a "wing spread" of nearly 20 ft. It is perhaps the largest of its species in this country, and we were anxious to save it. The storm had literally flattened the rose tree. Working for the better part of a day, Jeff and his crew cabled and bolted the rose tree together again. A public garden is fortunate, es-



A giant tulip tree (*Liriodendron tulipifera*) growing above the rose garden at the Morris Arboretum was completely uprooted. The upturned root ball measured over 15 ft. across. Also a Himalayan pine (*Pinus wallichiana*), an important backdrop to the rose garden, was felled. It was the only specimen of the species growing in the Arboretum's public garden.

pecially if they don't have arborists, to know they are at the top of the list of a tree company that will respond quickly in an emergency.

at the Morris Arboretum of The University of Pennsylvania

Horticultural organizations throughout the Delaware Valley rallied to help the Morris Arboretum. Consulting with staff arborists, Paul Meyer decided to close the Arboretum for six days. It was the first time anyone could remember that Morris Arboretum had been closed to the public. The grounds were simply too hazardous with hundreds of hangers dangling dangerously in damaged trees. Crews needed access to work areas without having to worry about visitors.

More than 3,400 hours were spent on the clean-up during the first four weeks after the tornado: 2,000 spent by outside contractors; other institutions volunteered 550 hours; the Arboretum staff spent 750 hours and Arboretum volunteers put in 100 hours. Help from Longwood Gardens, The Henry Foundation, The Chanticleer Foundation, Bryn Mawr College, Fairmount Park, and Pennsylvania Horticultural Society enabled the Morris Arboretum to reopen after six

days. Also a number of commercial contractors volunteered their staffs' assistance.

Assistance given to the Morris Arboretum and Blithewold Gardens & Arboretum was vital as well as heartwarming. Clean-up costs for the Morris Arboretum will be close to a quarter of a million dollars. Tree loss and damage as well as property loss will total over a million dollars. Blithewold's clean-up costs are reaching the \$50,000 mark. Tree loss has yet to be estimated. Each institution has many practical matters to face and problems to solve. Some of the results could prove of value not only to other public gardens but home gardeners as well.

help from Federal Emergency Management Association

Maps of collections are important in the aftermath of severe loss and damage. The first thing staff members of the Federal Emergency Management Agency (FEMA) told Blithewold they would need to begin the survey of the hurricane damage was a map of the Arboretum with the locations of damaged or destroyed trees identified. This was provided by Blithewold's designer and garden staff member Randy Harelson and grounds foreman Phil Aguiar. A FEMA

spokesperson told me that many not-for-profit institutions aren't aware that they may qualify for assistance and that when money is made available there will be funds to help with tree replacement and repair as well as storm clean-up and uninsured property damage. FEMA has worked in several Rhode Island communities surveying street tree damage. As an institution open to the public, Blithewold Gardens & Arboretum is eligible for assistance.

FEMA goes into action once an area is proclaimed a disaster by Presidential proclamation. The agency works through the state government offices and offers public assistance only. A letter of interest from a city, town, or non-profit institution sets the wheels in motion. The FEMA staff in Rhode Island has worked closely with Blithewold's staff to determine the extent of damage. The process seems tedious but once it is understood the paperwork is not so intimidating. Trees are assessed as completely destroyed or 50% destroyed. Trees with dangerous hangers of a certain diameter and still attached, but not resting in a tree, are counted. Where clean-up has taken place, craters and stumps are measured as are wood and wood chip piles. The

continued

STORM WARNINGS

FEMA staff has worked with Blithewold to provide all the information needed for the final reports. FEMA funding includes payment for tree replacement with trees that are 2½ in. - 3 in. in diameter. Although newspapers report that money may be a long time coming from the government, we feel it is worth the effort. Additional money for replanting and to cover the cost of clean-up will have to be raised elsewhere.

Historic and scientific documentation and accessioning of important trees is vital. The Morris Arboretum hopes to recover some of the loss to its living museum collection from insurance.

Homeowners will find that most insurance covers only property loss from tree damage, and trees damaged by lightning or fire. The American Society of Consulting Arborists is often called to help settle insurance cases where compensation claims for damage to trees have been made.

Richard Orth, arborist at the Morris Arboretum, is using the International Society of Arboriculture formula for determining the full value of the trees lost or damaged by the tornado. The circumference of each tree is measured 4½ ft. above ground. The basic value is determined by multiplying every inch of trunk area by \$27.00. The resulting valuation is devalued by a number of factors including: species, longevity, hardiness, all season interest, location and condition. Thus an oak would be considered more valuable than a wild cherry. A prized tree in front of someone's house would be more valuable than a tree in a woodland. A tree that is part of a scientific collection in an arboretum would be given a higher value than one on a golf course or in a backyard. As an example, a *Quercus coccinea* at the Morris Arboretum with a trunk diameter of 30 in. at full value is worth nearly \$20,000. Even with a high species value it was devalued using the ISA formula based on certain percentages to \$6,500 because of its location.

Photographing the storm damage is important and helpful. The photographs Mark Zelonis, Blithewold's director, took immediately after the hurricane documented the damage in each area. This documentation was used by FEMA, especially in areas of the Arboretum that were cleaned up before the agency's staff arrived on the scene. The storm photographs will become part of our plant records and archives. Immediately after the hurricane, Blithewold staff member Randy Harelson and I walked around the Arboretum noting the location of every destroyed tree. We also removed all the tree labels we could find to begin the process of de-accessioning the trees lost in

the hurricane. The resulting list of trees will guide us when we replant.

Some educational advantage can be taken from the storm damage by setting up storm-related exhibits. Paul Meyer suggests turning damage into temporary exhibits by leaving small areas as examples of just what tornado damage looks like. Downed trees can be left in woodlands to create new plant and wildlife habitats. Leaving some sort of a memorial to the storm could encourage people to continue donations long after the original clean-up is completed. Randy Harelson, who is the designer on Blithewold's staff, created an exhibit showing the aftermath of hurricane "Bob" using Mark Zelonis's photographs, debris washed up in the gardens and pieces of storm-damaged trees. The exhibit, featured in our Visitors Center, has kept the storm in people's minds. New visitors to Blithewold find it hard to believe that we were hit by a hurricane such a short time ago.

In some cases the storms removed trees that should have been taken out because they were too close to one another or in the wrong place. We all know how hard it is emotionally to remove a healthy tree!

The tornado damage was throughout the Morris Arboretum. The flattened areas such as the native woodland behind the Widener Education Center will be replanted with species that were there and should be there. The *Nyssa* grove next to the Rose Garden will need new trees in addition to those the staff hopes will recover. The 80-year-old Oak Allee was so badly damaged that it will need to be completely replaced. Replanting could allow the Allee to be

moved in a bit from the property line.

A public garden's statement of purpose can serve as a guide in planning for replanting. Blithewold is primarily an historic landscape, and we can be guided in choosing what we replant by what has been in the garden historically. We hope to replant species that came down not only as a result of hurricane "Bob" but from previous storms as well. We may have lost a total of 80 trees but those trees represented 25 species. Historically we have had a diverse collection of trees, many of them exotic. The original owners of Blithewold often added to the collection at Blithewold as a result of their travels.

Photographs, letters, and diaries are our tools for documenting the collection. The Morris Arboretum's collection is both historic and scientific and will be replanted keeping those factors in mind.

Even though Paul Meyer and his staff are faced with irreplaceable losses and a staggering amount of work, Paul was able to be fairly philosophical about the damage. As we spoke, we talked about how optimistic gardeners are in general and how each of our organizations has unique opportunities to replant for the future. Paul reminded me that gardening is process, that gardens are never static and that the loss of old trees, more vulnerable to damage, is simply part of a cycle. I'm sure each of our institutions could have done with a lot less of the "process." More than anything I think we have learned how valuable our gardens and arboreta are and that the public would mind terribly if we ceased to exist.

An Opportunity to Replant for the Future

Contributions for replanting trees at the Morris Arboretum and Blithewold Gardens and Arboretum are welcome and may be sent to:

Paul W. Meyer, Director
Morris Arboretum of The University of Pennsylvania
9414 Meadowbrook Avenue
Philadelphia, PA 19118

Mark Zelonis, Executive Director
Blithewold Gardens and Arboretum
Ferry Road
Bristol, RI 02807

Name _____

Address _____

_____ Zip _____

Amount \$ _____



Top left: Arborists from the Arnold Arboretum of Harvard University cut up a Norway spruce that landed on two American hollies at Blithewold Gardens & Arboretum. **Middle left:** Karen Piccoli, Phil Aguiar and Gabriel Monrue begin work clearing away the grove of nine Cedrela that came down in the storm at Blithewold Gardens & Arboretum. **Top right:** Within 10 weeks of the storm, most of the debris was cleaned up. Though many old specimens on the blackgum slope will be sorely missed, visitors to the Morris Arboretum are enjoying vistas that had been obscured for decades. Replanting will continue in the spring. **Bottom:** Blithewold Gardens & Arboretum staff, and the crew from the Arnold Arboretum, worked long, hard days to reopen three days after the hurricane hit. Although they reopened quickly, there's still much work to be done.

Julie Morris has been the horticulturist at Blithewold Gardens & Arboretum for the past 10 years. She is a frequent contributor to *Green Scene*.

SALVIAS

 by Joanna McQ. Reed

Back in the fall as we muddle through the late summer mugs, there's still a chance for a glorious explosion of color for weeks to come. The many species of ornamental salvias will provide such a late season treat. The flower buds of many of the species first commence to show and swell as late as September. The length of their color is dependent on the first serious frost's arrival.

Colors range through varying shades of reds and blues, however *Salvia madrensis* 'Forsythia Sage' has canary yellow flowers in long terminal spikes.

The many shades of green, in conjunction with the diverse texture, shape and size of their individual foliage, creates interest throughout the growing season, despite the lack, in some species, of summer flowers.

My interest was piqued while reading Margaret Brownlow's *Herbs and the Fragrant Garden* written in 1957 and reprinted in 1978.* She suggests they be used in herbaceous borders, taking into account that most will need to be treated as tender perennials. A supply for the coming year is assured by taking cuttings in the late autumn.

16 In the 1960s few of these species, or seeds for them, were available in the trade. The late well-known Delaware Valley herb gardener Nancy Putnam Howard introduced and shared treasures, collected during her extensive travels, with friends and nurserypeople alike.

In my own garden a great favorite, *Salvia pratensis*, was and continues to be a star. Basal rosettes of rough-textured dark green leaves 7-8 in. long produce wands of vivid blue or purple flowers 18-24 in. tall in early May, occasionally late April. Their assured three weeks of full bloom can be extended by deadheading. A bold statement, a striking full-blown perennial to bridge the fading daffodil show and the awaited glory of iris, poppy and peony.

Happily the biennial dye herb, woad,

Isatis tinctoria a 3-4 ft. froth of citron yellow is at its loveliest concurrently as are the massive lavender trusses of the *Paulownia tomentosa*. The salvia blooms year after year where planted. The woad self sows into new territory each year, but fortunately, the same neighborhood. (I was told the woad depletes the soil of its specific needs.) The paulownia or empress tree is such a prolific bloomer it rests on alternate years by producing sporadic flowers.

The word *pratensis* indicates this salvia to be a meadow plant (Latin: pratum means meadow). I have sown seed and planted both young and full-grown plants in the meadow. Only once have I been rewarded with a bloom. Although I rate it "uncooperative," I continue to try to get it established, encouraged by its propensity to create a meadow effect in my garden unless the seedlings are weeded out.

The eye-catching clary sage, *Salvia sclarea* grown from ancient times for medicinal use and perfumery has provided an accent or focal point in many an herb garden or herbaceous border. Two spectacular strains of this clary are *Salvia turkestanica* and *Salvia sclarea* 'Vatican Strain.' The first mentioned *S. sclarea* is a true biennial, it blooms and dies. Its self-sown seedlings will bloom the following summer. The other two must be propagated by cuttings or layering.

This is also necessary to retain the three showy variegated forms of *Salvia officinalis*, our old culinary friend: *S. officinalis* 'Purpurascens' the purple, sometimes referred to as red sage; *S. officinalis* 'Icterina' the golden sage; and *S. officinalis* 'Tricolor,' tricolor sage with leaves pink, cream, purple and green. All three are used for stunning foliage effects. *S. officinalis* 'Purpurascens' seems the hardiest of the trio. It is prudent to bring along cuttings of all three as insurance.

Salvia 'Berggarten,' a broad-leaf cultivar of *S. officinalis*, planted among small-leaved oreganos and/or needle-leaved thymes becomes a handsome accent plant reaping compliments. *S. officinalis* 'Nana,'



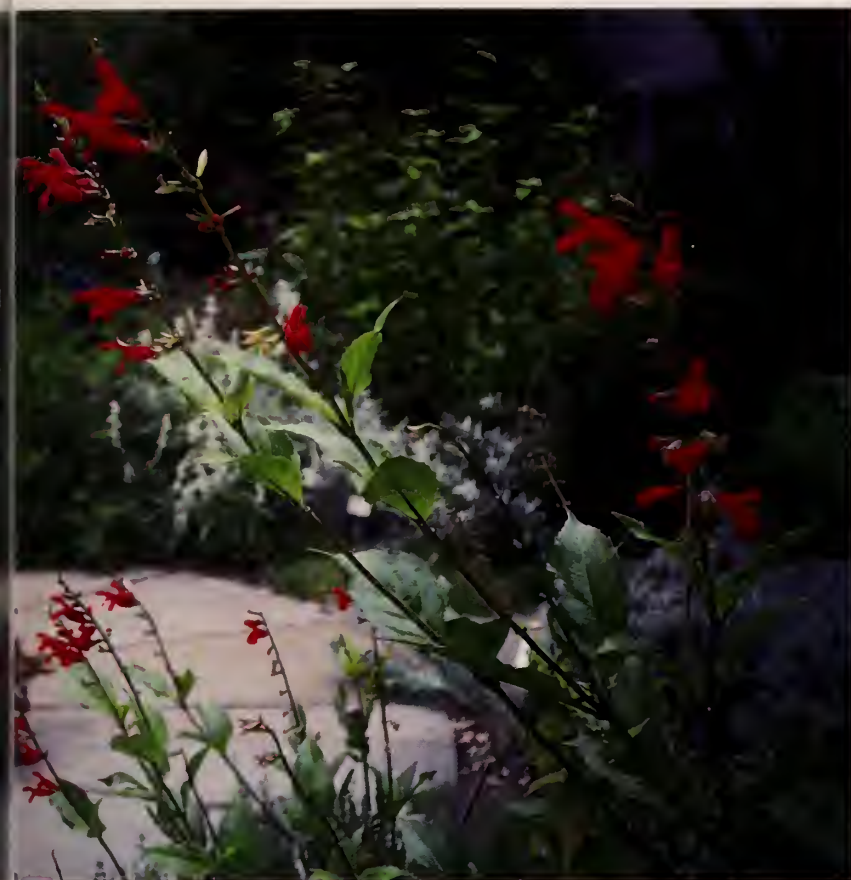
lower growing with small leaves and more compact than *S. officinalis*, blooms generously making a great edging or front-of-the-border plant. It is ideally suited for small gardens and pot culture.

S. farinacea, a half-hardy perennial and *Salvia viridis*, an annual formerly called *Salvia horminum*, have long been known and used as fillers for reliable summer-long color. New cultivars of both are available. *Salvia farinacea* 'Victoria' at 18 in. and *S. farinacea* 'Mini Victoria,' 12 in., are both clear violet blue. *S. farinacea* 'Silver White' 18 in. and *S. farinacea* 'White Bedder' at 2½ ft. add sparkle and luminescence. Jane Pepper, president of The Pennsylvania Horticultural Society, says: "Thanks to our mild winters of the past few years some of my (supposedly) annual plants of *S. 'Victoria'* have proved perennial. In fall I cut them back to a couple of inches above the soil line, come spring several have produced new shoots."

Salvia 'Indigo Spires' produces incredibly long spikes of deep rich violet blue from early summer. Give this plant plenty of space as it is a vigorous 4 footer. It is reputedly a hardy perennial in Zone 6. Among my gardening friends, I alone have had no such luck.

S. viridis, annual clary, come easily from seed. Thompson & Morgan carry a new

*PHS Library has 2nd ed. of Margaret Brownlow's *Herbs and the Fragrant Garden*, Revised & expanded, McGraw Hill, New York, 1963.



Top left: *Salvia miniata* blooms early and continues until frost.
Above: *Salvia guaranitica*, the first salvia to bloom in the author's garden in June.
Below: *Salvia leucantha*.





Salvia involucrata, the rose bud sage.

cultivar 'Claryssa' in separate colors: blue, pink, and white. Their claim: "dwarfer, more compact habit and broader substantial blooms (bracts)." Since the local rabbits developed a passion for mine, I am unable to vouch for T. & M.'s claim or know if they self-sow as does *Salvia coccinea*, another glorious annual sage.

Over-wintered *S. coccinea* cuttings taken in the fall and set out into the garden after our May 15th frost date will be blooming with brilliant clear red spikes by the end of June, 18 in. to 3 ft. depending on location. The effect of this plant is light and airy in direct contrast to the better known scarlet sage, *Salvia splendens*. I was given plants of a white and a peach color form of *S. coccinea* this spring. Both were tall, vigorous plants, the white especially useful in bringing the sparkle of silver and gray border herbs in at a higher level. When the ground has completely warmed you will find ample seedlings of *S. coccinea*, easy to transplant and readily floriferous. I hope this will be true of the pink and white forms.

S. splendens, the scarlet sage of many a park bedding scheme (which has not enhanced its reputation), now can be had in lovely shades of purples, mauve, salmon, peach, and I am told, lime green. Thompson & Morgan offers *S. splendens* 'Splendissima' 8-12 inches "ideal for cool wet conditions and hot humid environments never showing a lull in flowering." Sounds ideal for our Philadelphia environs. What a test 1991 would have been.

Salvia azurea, dependably perennial, makes a clump of willow-like wands topped in September with azure blue flowers that need support to be fully effective. This support could be early-placed stakes or pea brush, or better a companion plant to weave through or drape over.

Salvia uliginosa, bog sage, is another perennial, tall, wand-like with sky blue flowers. It seems to make its spring appearance later than most perennials so mark well and be patient. It also self sows, so be on the lookout for bonus plants.

tender perennial

Now for a feast of the tender perennial salvias mentioned earlier. I start with *Salvia guaranitica*, the first of mine to bloom, a 4-5 ft. giant, acting the part of a true perennial these past three mild winters. I took cuttings annually to be on the safe side and found the new plants were only three to four weeks later with their flowers than the established plants. Their timetable seems to be late June.

Plant *S. guaranitica* to be viewed from porch, terrace or window; it is irresistible to hummingbirds and butterflies, they constantly hover. The flowers are a clear vibrant blue with never a let up until heavy frost. The leaves are elongated hearts held by short petioles. As with the majority of salvias, they remain free of insect damage.

A new cultivar introduced by Delaware Valley horticulturist Charles Cresson is *S. guaranitica* 'Argentina Skies,' a 100% true sky blue. *S. guaranitica* 'Late Blooming

Giant' waits until October for its floral show, when longer, darker but still bright intense blue flowers top off the 4-5 ft. plants. Wonderful with other fall perennials such as asters and Japanese anemones. *Salvia* 'Purple Majesty' (*S. guaranitica* x *gesneriflora*) is covered from mid-summer on with dark purple flowers.

The *greggii* salvias come in shades from white through peach, coral, rose, scarlet

If I were asked to choose a favorite among these salvias, which would be difficult at best, Salvia involucrata would be the choice. Why? Even without its superb floral display, it is a beautiful plant, an asset to any garden.

and raspberry. Their foliage is smaller, fresh green and oval. Flowers are produced continuously from late June to frost. By the summer's end the plant has grown woody. If lifted it would undoubtedly continue to bloom all winter in a greenhouse as would *Salvia leucantha*. I often lift these and other tender salvias, heavily pruning back both top and roots before potting, keeping them dormant on a cold porch. This assures earlier bloom the following year.

S. leucantha, the Mexican bush sage, is a stunning addition to the garden with long willow-like leaves growing 3-4 ft. in the season. The hotter the weather the more silvery this plant becomes. The undersides of the leaves being pure white, a breeze causes a lively shimmery effect. The bloom spike, in form similar to the more familiar *S. farinacea*, almost appears artificial, having velvety purple calyxes and white fuzzy blossoms. They dry easily and well for use in arrangements.

Two wonderful reds take their places in the earlier blooming category, like the others continuing until frost. *Salvia miniata* with smooth apple green foliage, a great foil for the vermilion flower spikes is low-growing at 18-24 inches. *Salvia van houttii*, a vigorous plant to 3½-4 ft. is covered with burgundy bracts from mid-summer until early November. It, like *Salvia involucrata bethellii*, the rose bud sage, can withstand some frost, continuing its bloom after most trees and shrubs are leafless.

a favorite

If I were asked to choose a favorite among these salvias, which would be difficult at best, *S. involucrata* would be my choice. Why? Even without its superb floral display, it is a beautiful plant, an asset to any garden. The stems are a rich dark carmine, only upon growing woody do they turn brown. The petioles of the softly

tomentose acid green leaves are a brighter, more vivid carmine. Pinching back produces bushy growth. These pinched off snippets can be rooted as late as June to produce flowers (with favorable weather) in October. The flowers are a rosy earmine pink, eye-catching at a distance. The rose bud, which led to its common name, is actually a tight cluster of tightly folded bracts.

The two best known fruit-scented salvias, pineapple sage, *Salvia elegans* (formerly *S. rutilans*) with bright red spikes of flowers in late summer, and *Salvia dorisiana* with large tomentose leaves, a recalcitrant winter bloomer, have long been herb garden favorites. So too is *Salvia clevelandii*, grown for its sweet fragrance, popular for pot-pourri; *S. clevelandii* has lavender-blue flowers in regularly spaced prominent whorls, the length of its bloom stalks. My success with this beauty has been nil. Reputedly it is not difficult to grow, so I keep trying.

Salvia discolor, known to withstand wet weather better than most of its kin, has leaves whose undersides are pure silver. The silvery white bracts and small, almost white blossoms are late, discrete and curious. Lifted and potted last fall, as an experiment, it grew well on an east windowsill.

I've mentioned but a few of the amazing salvias available to gardeners today. Enthusiasm for this genera is rapidly spreading, understandably so. The Philadelphia Unit of the Herb Society of America has an ongoing study of the genus, growing and assessing new varieties each summer. The most exciting are then offered along with cultural advice at their spring sale the second Thursday in May.

My intent has been to arouse your interest in the salvias that have brought me such joy and satisfaction. Try a few new salvias next spring. They are simple to incorporate into garden schemes. They are not difficult plants to grow. I do recommend adequate drainage to insure winter survival. This past summer proved them to be champs at heat-and-drought tolerance. An occasional unseasonably hard frost might cut them down early, but the fresh exuberance they normally bring to a fall garden is a joy worth the gamble. They can be used as a feature or background. They look beautiful with gray and silver foliage plants, mixed with annuals and/or perennials in borders or as container plants. There are even species suitable for a rock garden: *Salvia chamaedroides* (wall germander or chichuahuan sage), semi-prostrate with bright blue flowers, and *Salvia roemeriana*, a neatly compact plant sporting 6 in. stalks of brilliant rosy red flowers.

I close with a quote from garden writer Allen Lacy: "In the last few years I've learned more about salvias, enough to know there's more learning to come. . . . The genus is going to be one of the hot new tickets in American horticulture as we move into the 21st century."

With 750 or more species in this genus throughout the world, it would seem there is plenty of "learning to come" for all gardeners.

MORE ABOUT SALVIAS

Two articles of interest in recent publications:

"Late Season Salvias," Allen Lacy, *Horticulture*, October, 1990.

"A Profusion of Sages," Betty Clebsch, *Herb Companion*, Oct/Nov 1990.

SOURCES for Plants & Seeds

Logee's Greenhouses
55 North Street
Danielson, CT 06239
(203) 774-8038
Catalog \$3

Montrose Nursery
P.O. Box 957
Hillsborough, NC 27278
(919) 732-7787
Catalog \$2

Parks Seed Co.
Cokesbury Rd.
Greenwood, SC 29647-0001
(803) 223-7333
Catalog free

Sandy Mush Herb Nursery
Rt #2, Surrent Cove Rd.
Leicester, NC 28748
(919) 683-2014
Catalog \$4

Stokes Seeds Inc.
Box 548
Buffalo, NY 14240
(416) 688-4300
Catalog free

Thompson & Morgan
P.O. Box 1308
Jackson, NJ 08527
(908) 363-2225
Catalog free

Well Sweep Herb Farm
317 Mt. Bethel Rd.
Port Murray, NJ 07865
(908) 852-5390
Catalog \$2

PROPAGATING SALVIAS

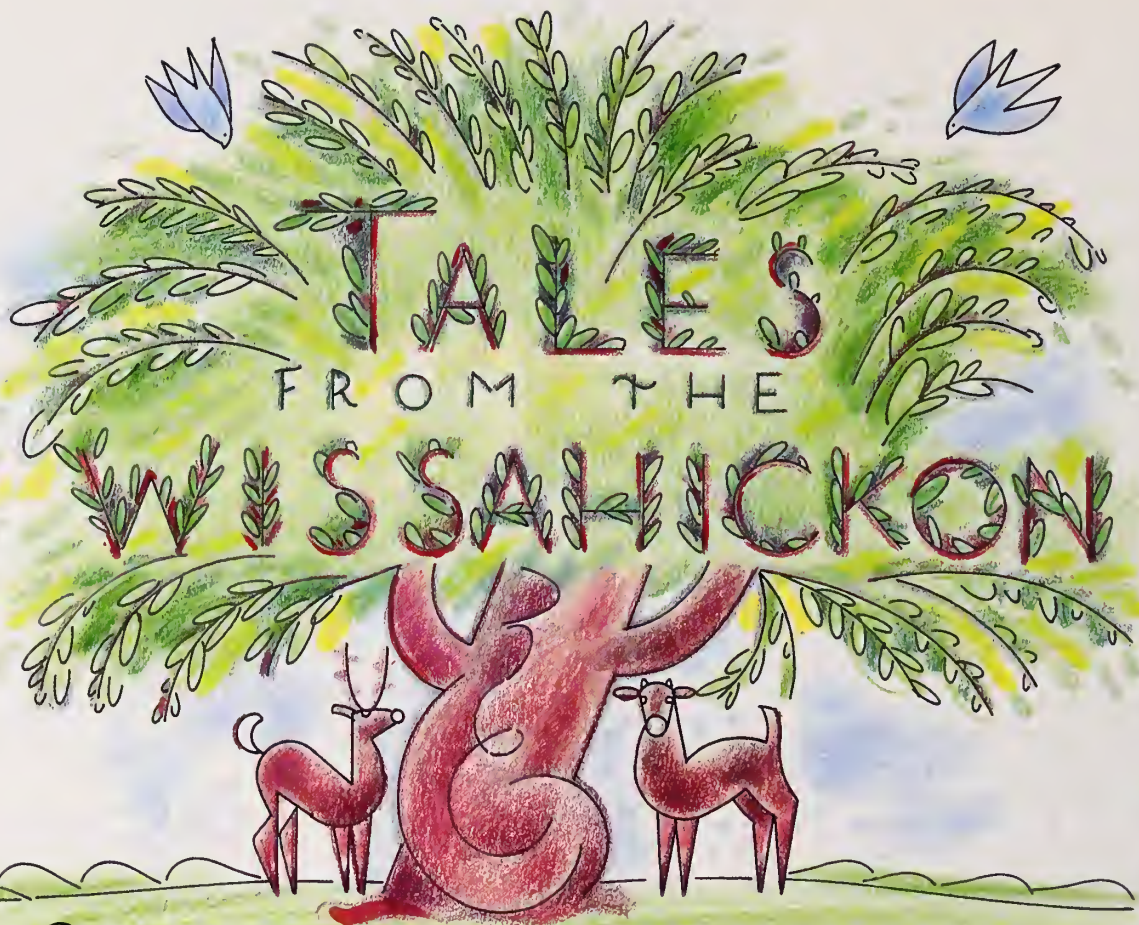
Although now available from nurseries, to insure an ample supply of the ornamental salvias for the following summer I pot up smaller specimens of my favorites in a mix of soil, grit and Pro-Mix. The tops are cut back and the plants are given a minimum amount of water until late March or early April, when I put them outdoors to harden off and start new growth. I bring them inside if the temperature drops below 32°.

I also make cuttings of each species. Since indoor growing space is limited I use 3- to 4-in. pots filled with a mix of grit and perlite or grit and vermiculite (any favorite mix will do). The cuttings can be closely spaced, 6 to 10 of the same species per pot. This allows for a percentage of loss or welcome gifts to a gardening friend. Of extreme importance: keep the rooting medium moist at all times.

On my west-and north-facing windowsills with a minimum of bottom heat, from rarely hot 'old house' radiators, the roots develop by early February. The loose gritty mixture, shaken from the pot, simplifies the separation of the small plants' root systems, for individual potting. To ease this transition for the fragile plants, I incorporate some of the rooting medium with the potting soil (in equal amounts).

The small plants can be grown on a windowsill, the sunnier the better at this point, or under grow lights. They should be pinched back, fertilized and watered regularly and put outdoors with the older plants, discussed earlier, using the same precautions on frosty nights.

Joanna Reed, whose garden is open to the public starting in April, grows in enthusiasm and knowledge with each visitor. Joanna's garden has been featured in many magazine articles and several books, the latest of which is *Moments in the Garden* by Tovah Martin, Hearst Books (affiliate of Wm. Morrow), New York, 1991. Joanna Reed is past president of the Herb Society of America, and past chair of the Philadelphia Unit of the HSA.



by Bea Weidner

A garden discovered in a book enchants; the author stumbles on her childhood dream garden and shares it in turn with her own child.

My garden was always waiting for me. This garden of my childhood daydreams was painted in a book by Jesse Willcox Smith.* It had pillars of hollyhock and wispy things you could get lost in; golden fish streaking under dark lily pads and a glistening eye watching from behind a jeweled leaf. You could lie down and be warmed by the sun, and if you were hungry, sweet smells directed you to hidden treasures; berries heralded first by birds were there for the picking. Then you would

choose the loveliest of blossoms, carry an armful to your bedroom to fall asleep and dream again.

These were the musings of a small child with a backyard made of concrete. The path from the child's daydreams and from the concrete yard led this way and that to a house that proved irresistible. Or should I say, to a garden that beguiled me. Shopping for a house one September morning in the Wissahickon woods, my husband measured and probed the things that make a house work. That is

his profession. But I stood eye to eye with a lily and then sat on a step to commune with the inhabitants of a most lovely "garden room." This was a classically designed James Bush-Brown formal garden: the stone walls and gates, a lily pond with a small boy fashioned of limestone standing watch over fish. The grass carpet invited one to step forward and view the tapestry and color of bloom.

We never looked at another house. We moved bag and baggage; arranged it all; met neighbors, made acquaint-

* *A Child's Garden of Verses* by Robert Louis Stevenson with illustrations by Jesse Wilcox Smith published by Charles Scribner's Sons, New York, 1947.

continued





illustration by Bea Weidner

tances. And then I learned that Jesse Willcox Smith had lived next door and it was there, in her garden, that she had painted children as they played and dreamed.

The garden that I now call my own had its beginnings in the 1920s when two grownup sisters decided to build a house in the "country" a little removed from their family in Germantown, where they could set up residence and paint in a beautiful quiet setting. Those two Justice sisters made a pact, over lunch, to be neighbors with Edith Emerson, assistant to Violet Oakley, painter of murals for the Pennsylvania State Capitol Building.

From Miss Oakley they bought a rectangular piece of land carved from her property perched on the side of the Wissahickon. They set a privet hedge all around and made a house with too many windows. All the better to see a beautiful garden.

The first plants I brought to the garden were six gardenia standards in terra-cotta pots. They stand upon the terrace under swathes of wisteria, like six ladies wearing stars in their hair at night, where bats fly and fireflies fill the sky with tiny winking lanterns, the air rich with perfume. To their left hangs a grapevine, sumptuous, seedless seductress of concord luring all the birds. This vine shares the cartouche of an iron fence with the white autumn clematis. One's eye follows a stone wall to an ivy arched entrance. Once inside iris leaves laugh in the breeze while roses languish about the walls. One rose is an ancient white, another a simple five-petaled burgundy, another a delicate pink moss with flowers like many layered crinolines.

The pool in the center is the home of the fish and the frog. The latter courts his lady love in spring song and raises a huge family, hundreds of tadpoles, in tiny quarters. Their ceiling is festooned with waterlilies of pink and white and one a screaming cerise. When winter ices their ceiling the fish sleep the season through, gold through

the glaze.

The residents of the four symmetrical flower borders are meant to harmonize into a soft, old-fashioned bouquet. The edges play a full range of green from golden to a silvery froth establishing a textured edge, followed by a woven intricacy of leaf and stem with flowers bubbling to the surface. They depend upon one another for mutual support, spilling and drifting into an artful tangle. They resemble students being photo-

To cultivate a garden is to fashion a universe.

graphed for a class picture. And I, the photographer, constantly review them, with requests for change: "Would the small one in the third row please come forward so I can see you. And, would the twins kindly separate."

Foxgloves have replaced the hollyhocks. Like ballerinas turning, then making a pirouette of bloom, I dance them off to another spot in search of a congenial companion. This neighbor is the poppy. After a brief but spectacular bloom the poppy conveniently disappears, leaves and all, allowing light for a generation of new foxgloves to flourish. Giddy feverfew eagerly volunteer all over the place. They must be collected with the larkspur and grouped into tidy mounds. Bronze fennel provides a mysterious background with tritoma "hotpokers" burning through, cooled by rising groups of phlox, michaelmas daisies and anenomes waiting to make their autumn debut.

Those small wonders that come to the front and stand all around the brick edge are soft lamb's ears waiting next to lady's mantle, dripping dusty chartreuse blooms, mounds of golden oregano loving sweet william with thyme. The tiny dahlberg daisy winds past fragrant artemesia and calendula.

Choosing the middle are some wonderful yellows, evening primrose, St. John's Wort and coreopsis together with bundles of lavender chives. Dependable daylilies stand by their regal cousins, black dragons and rubrums, they elevate themselves to great heights.

One solemn sentry stands alone and highest of all, the giant malevolent monk's hood whose intense purple blooms resemble a crowd in medieval prayerful supplication. All a deadly class "A" poison. Approach such a presence with respect.

Now I watch my daughter Emily experience our bit of nature. As a tiny baby, with eyes slitted against the sun, even the grass was an annoyance to one so newly arrived in this world. In time we tasted fennel buds sweet as sugar and pungent with flavor. We'd gather a snack of alpine strawberries. We'd eat nasturtium flowers and leaves and screw up our faces at the "nip." We made crowns of ivy and rosemary studded with flowers. Magic potions were mixed from things of great color and aroma, plays enacted and spells cast with green onions. Jenny, a vacationing guinea pig favored clover "lollipops." Emily gathered her gifts and presented them in tiny baskets. In autumn dry poppy pods became exotic salt shakers, a rhubarb leaf, the most stylish chapeau.

Now in her new age of awareness Emily confidently continues this search on her own and with friends. She asks me, "Do noses have taste buds?" For young eyes to watch a seed sprout and grow into a green plant under one's own hand is to work magic. To cultivate a garden is to fashion a universe.

Bea Weidner is an illustrator who renders her comments on life in colorful strokes. Her appetite for ever-fresh ideas had led her to use words along with her pictures; a writer emerges.

POISON IVY

A BANE FOR ALL SEASONS

 by Carol Fletcher Daniels

Poison ivy is toxic year-round. Learn how to identify it in all seasons.

My husband's most enduring memory of summer camp: "Poison ivy." A nighttime game of hide and seek involved a fateful slide down an embankment crawling with the stuff. Jim's body was later covered head to toe with poison ivy blisters plastered pink with calamine lotion. The camp nurse phoned to ask Mom and Dad to retrieve their son a bit earlier than they had expected.

Obvious to anyone who has ever known the agony of its itch, poison ivy contains a powerful skin irritant. The offending substance is an oil called urushiol, found throughout the plant, roots and all. The skin must come in direct contact with the oil or with smoke from burning poison ivy to be affected. It is not only necessary to avoid the plant, but anything that touches it as well: clothing, shoes, tools, even pets.

Many people are unaware that all parts of the plant remain toxic throughout the year. My dermatologist mentioned that she sees a number of patients each winter with poison ivy dermatitis on their hands and forearms. They frequently get it from carrying firewood on which the vine has grown. To avoid poison ivy, it's essential to learn how to identify the plant in all seasons.

through the seasons

Poison ivy grows as a climbing vine, trailing groundcover, or an upright shrub. Sometimes it can fool you. Last fall, I was surprised to discover that a tree I had observed from a familiar walking path was considerably smaller than it appeared. Closer inspection showed the far side of the tree to be a huge, hairy boa constrictor poison ivy vine. The poison ivy gave itself away when it held its showy red autumn

leaves longer than its hapless host.

The saying "Leaflets three, let it be" is a fair warning against poison ivy some of the time, but certainly not all of the time. Poison ivy is one of a relatively few plants that have three-parted compound leaves and is without prickles or thorns. The leaves are alternate and can vary greatly.

My dermatologist mentioned that she sees a number of patients each winter with poison ivy dermatitis on their hands and forearms. They frequently get it from carrying firewood on which the vine has grown.

Long-stalked and often large, they may be shiny or dull, thin or leathery, and with wavy, toothed, or entire margins. They are green in summer, but young or dying leaves may be somewhat reddish. And they can turn spectacular shades of red, yellow and orange before dropping in autumn.

In spring, poison ivy vines have small, greenish flowers borne in upright panicles. These are followed by berry-like drupes that ripen to resemble clusters of miniature white grapes. The fruits persist into fall and winter. The stems of poison ivy are brown, and if climbing, bear short rootlets and many dark fibers with age. It pays to know this "fuzzy" vine when those "leaflets three" are not present.

poison ivy's family

Poison ivy is native to eastern North America, but is found throughout much of the United States and into Canada and Mexico. It is a member of the cashew family, *Anacardiaceae*, which includes mango, pistachio, and the sumacs. Irritating

substances similar to urushiol can be found in the fruit walls of cashews and mangoes, though not in the fruits themselves.

For years poison ivy and its close relatives, poison oak and poison sumac, have been placed with the sumacs in the genus *Rhus*. Poison ivy has variously been called *Rhus radicans* or *Rhus toxicodendron*. More recently it has come to be called *Toxicodendron radicans*, placing it in a separate genus along with poison oak and poison sumac. Poison sumac (*T. vernix*) has leaves with seven to 13 smooth-edged leaflets. Also a native of eastern North America, it is found in swampy areas. Poison oak has those "leaflets three," but they are lobed in a way that resembles a white oak leaf. Poison oak is either of two species. Western poison oak (*T. diversilobum*) is found along the Pacific coast. Eastern poison oak (*T. quercifolium* or *T. toxicarium*) grows in sandy soils in the east. These three plants are said to cause more human misery in the United States than any other plant.

It's only fair to mention that poison ivy is a valuable wildlife plant. Its fruits are a food source for many species of birds, unaffected by the urushiol they contain. However, the seeds pass through the birds' digestive systems, distributing the plants far and wide. You don't have to spend a great deal of time outdoors to know that poison ivy is a widespread and ever-growing weed problem. It can be found just about anywhere, growing as happily up the side of a city building as in woods, fields, and gardens.

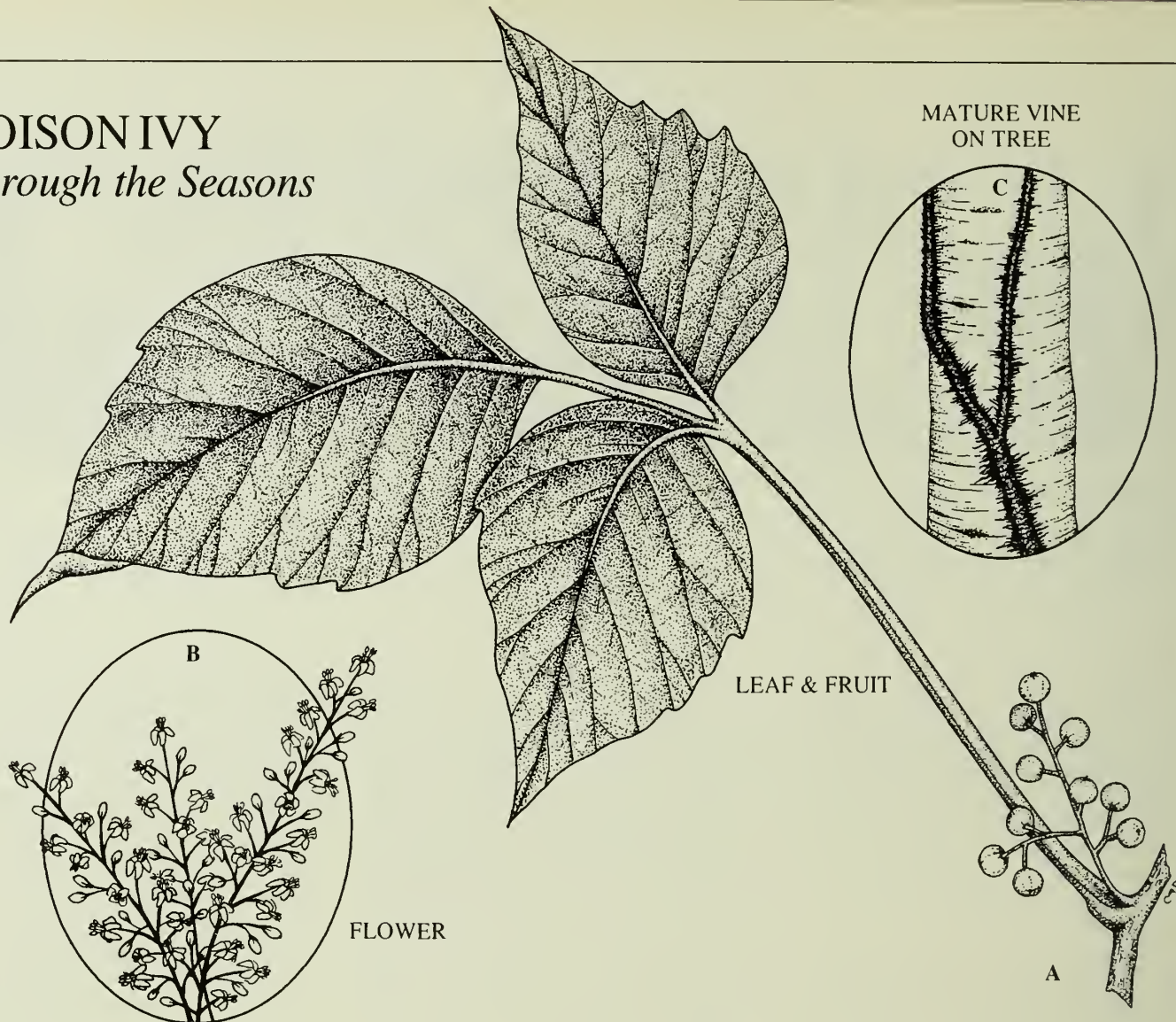
get rid of it

When you find poison ivy growing on your property, take care to keep it from becoming established. There are herbicides that can effectively eradicate this pest. You

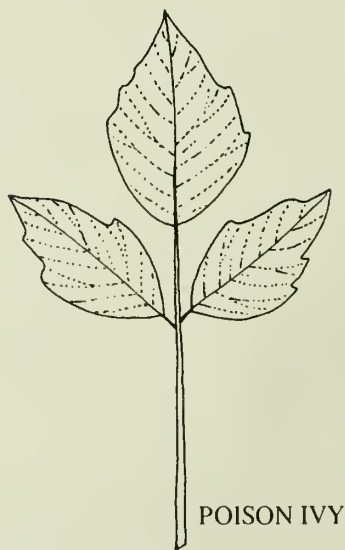
continued

POISON IVY

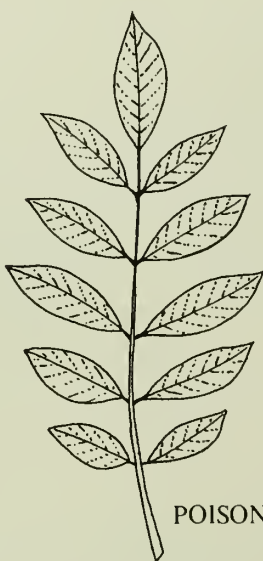
Through the Seasons



A. The leaves of poison ivy can vary greatly in size and appearance. They are identified by their characteristic three leaflets. In fall they often turn brilliant shades of red. The fruits are berry-like drupes that ripen to resemble clusters of miniature white grapes. They persist in autumn and winter after the leaves have fallen. B. The small, greenish flowers of poison ivy are borne in upright panicles in the spring, shortly after the leaves have emerged. C. In winter, poison ivy vines can be identified by their brown color and the presence of short rootlets and fibers which give them a “fuzzy” appearance.



POISON IVY



POISON SUMAC



POISON OAK

HOW TO TREAT POISON IVY

So, what should you do if, armed with all this knowledge and perhaps years of experience, you still become the unwitting victim of poison ivy? I asked dermatologist, Diana Brown, whose office is in Erdenheim, what she advises.

First, if you know contact was made, wash the affected area with lukewarm water and mild soap as soon as possible. Brown cautions, "Most important: don't scrub the skin. A gentle, thorough cleansing is most effective and must be done within the first 20-30 minutes after exposure to prevent the allergic reaction." Rubbing alcohol is also an effective solvent but tends to cause the skin to become overly dry.

Symptoms of an allergic reaction will appear within 12-48 hours after contact with urushiol. Redness and swelling are followed by the formation of blisters and severe itching. The dermatitis usually heals in about 10 days, though more severe reactions may require three weeks until recovery.

Seek a physician's attention if extreme swelling occurs, if the eyes become swollen shut, or if you experience itching that interrupts sleep. Also see your doctor if the clear blisters become honey-colored, or when itching is accompanied by skin tenderness. These are signs of secondary bacterial infection.

Don't scratch. Scratching the rash or touching the blisters will not cause the rash to spread. The fluid in the blisters doesn't contain urushiol and therefore will not spread the dermatitis. Scratching does, however, invite infection.

If you can't scratch, then what can you do to alleviate suffering? Brown recommends old-fashioned calamine

lotion, which is soothing, but cautions against using "Caladryl," which contains topical diphenhydramine. She also says to avoid topical anesthetics because "these agents can themselves induce an allergic contact dermatitis, as can topically administered Benadryl."

Over-the-counter cortisone creams aren't strong enough to do any good. Prescription cortisone cream, gel, or spray can help. Concerning oral or injected steroids, Brown states, "Systemic corticosteroids can indeed abort an allergic contact dermatitis. They can also provide significant relief from itching and swelling once an allergic reaction has begun."

You can also find help in your kitchen. A dilute vinegar solution (¼ cup vinegar to two cups of warm water) can be used to dry up blisters once they are formed. This solution can also help prevent secondary bacterial infection. Soaking in a lukewarm bath, which contains oatmeal or baking soda, will provide comfort and also help dry oozing blisters.

I asked about efforts to decrease an individual's sensitivity to urushiol. Brown responded, "Desensitization treatments have been attempted, especially for firefighters in the Forest Service. These treatments haven't been uniformly effective and have, on occasion, caused more severe allergic reactions than the contact dermatitis they are designed to prevent."

Until a better method of prevention comes along, learning to stay clear of poison ivy is still our best hope. If that isn't good enough, then I wish you a speedy recovery.

Carol Fletcher Daniels

Poison ivy, poison sumac and poison oak are said to cause more human misery in the United States than any other plant.

might have to cut poison ivy vines from trees, which would be damaged by the use of sprays. If that is so, someone who is not particularly susceptible should do the cutting. Dress for protection and always proceed with great caution. Clean carefully all tools and clothing that contact the plant. Check with a good garden center about what products to buy and how to use them, and then be diligent in your efforts.

If you haven't had "poison ivy" since you were a kid, don't assume you've outgrown it. My husband never outgrew his extraordinary reaction to the plant. He is living proof that sensitivity to urushiol may well increase with each exposure to it. Jim is certain that he had at least a dozen run-ins with poison ivy during his formative years. Over time, he learned to bear the frustration of the rash's relentless itch and the embarrassing telltale chalky pink of a heavy calamine user. He also learned that it is better to avoid this plant in the first place.

His last episode was quite gruesome. Jim was a graduate student at the time; I remember him taking exams with his badly blistered and oozing hands and arms wrapped in yards of gauze, mummy

CAUTION:

Never burn poison ivy. Urushiol is carried in the smoke and inhaling it can cause serious problems. Be careful when burning brush, it could well contain poison ivy that you are unaware of. Stay away from the smoke.

Be aware that urushiol is a stable substance and remains active for long periods of time. If you didn't clean them carefully, last year's tools and clothing can continue to be sources of contamination.

Wear protective clothing in areas where you are likely to come in contact with poison ivy: long-sleeved shirts, long pants, socks, shoes, gloves. Wash garments separately, several times if you suspect contact was made.

Never attempt to "desensitize" yourself to urushiol by deliberately touching poison ivy or by ingesting any part of the plant. That is pure foolishness and could prove dangerous. Remember, the only way to prevent a reaction to poison ivy is to stay away from it.

If you've never had poison ivy, don't assume that you are "immune" to it, no matter how old you are. Although no one is born with a sensitivity to poison ivy (your body will not react the first time it is exposed to urushiol), you can develop a sensitivity at any age. Most people will, sooner or later, develop an allergic reaction if exposed to poison ivy. It's not safe to assume you are one of the few who will not.

Don't assume that familiarity with poison ivy will allow you to avoid it forever. If you spend much time outdoors, expect it to surprise you someday.

fashion. Fortunately, our children were too young then to be haunted by memories of their father in this condition. They are also fortunate that they don't appear to have inherited his extreme sensitivity to poison ivy. At least so far — their days at camp are yet to come.

•
Carol Fletcher Daniels is a free-lance writer and illustrator. She has a B.S. degree in zoology from Duke University and is a part-time student of horticulture at Temple University, Ambler Campus.

Available: Hard-to-find flower and vegetable seeds that are part of our nation's history.

CENTER FOR HISTORIC PLANT RESEARCH

 by Patricia A. Taylor

Gardeners who visit the Plant Shop on the Monticello grounds (Charlottesville, Va.) this year will find a superb collection of hard-to-locate flowers and vegetables for sale.

Included among Monticello's offerings are the painted lady rose campion (*Lychnis coronaria* 'Occulata'), which has white flowers with pink eyes; snails (*Medicago scutellata*), a 19th century curiosity plant with seed pods that look like fancy snails; and *Iris graminea*, a plant grown in European gardens three centuries ago and once featured in Henry Francis du Pont's gardens at Winterthur.

The story of how these plants arrived at a small retail establishment in central Virginia begins almost 200 years ago in Philadelphia. There, in 1796, a 21-year-old, newly arrived Irishman named Bernard McMahon decided to set up a seed and nursery business. In the process, he became one of our country's pioneering plantmen.

Two aspects of McMahon's life set him apart from all other nurserymen. The first, his *American Gardener's Calendar*, a unique, 648-page compendium in which he described not only the state of gardening in the United States in the early 1800s, but also listed all the plants in our country at that time.

The second was his friendship with Thomas Jefferson. McMahon not only supplied Jefferson with plants but also shared the president's enthusiasm for native American flora. It is said that the Lewis and Clark expedition was planned in McMahon's Philadelphia house.

Our story now fast-forwards to 1983. That was the year in which Peter J. Hatch, director of Monticello's Grounds and Gardens Department, instituted guided tours through Monticello's gardens. Hatch noticed that many of the visitors were involved in restoration work. They had no idea, however, how to find many of the plants that had populated the gardens of a century and more ago.

a new organization needed

A busy man himself, Hatch could sympathize with their plight. He felt an organi-

zation was needed, not only to document the plants that were grown centuries ago but also to track them down, propagate them, and let the gardening public know they were available.

Hatch also realized that the interest in historical plants coincided with a heightened environmental awareness that eschews heavy reliance on fertilizers and pesticides. Old-fashioned plants, many of them species

Hatch felt an organization was needed, not only to document the plants that were grown centuries ago but also to track them down, propagate them, and let the gardening public know they were available.

and not overbred cultivars, grew without the use of such additives. In addition, others are beautiful plants that would look lovely in today's gardens.

Hatch presented a detailed proposal for the creation of a Center for Historic Plants to the Thomas Jefferson Memorial Foundation, Inc. The Foundation approved the plan and then hired John T. Fitzpatrick in 1986 to implement it.

Fitzpatrick brought with him not only a personal fondness for antique varieties but also a network of personal contacts obtained through his work as assistant director of Horticulture at White Flower Farm in Litchfield, Connecticut, and as garden curator at Bressingham Gardens in England. These contacts, plus an extensive horticultural library consisting of books, reference works, and mail-order nursery catalogs, help Fitzpatrick to identify and locate old-fashioned plants.

The Center's scope of interest is broader than Monticello's, where the gardens concentrate on flora documented through Jefferson's death in 1826. Jefferson, says Hatch, noted only 104 plants in his Journals. McMahon, who was in constant communication with Jefferson, described over 5,000. Hatch feels, as far as garden restoration is concerned, there's a happy medium between

these two extremes. "At Monticello," he says, "Jefferson is the foundation and McMahon the walls."

The Center for Historic Plants, Fitzpatrick explains, supplements the research and propagation work at Monticello by including plant varieties documented in American gardens up to the early twentieth century.

focus on ornamentals

The Center primarily focuses on ornamentals. Fitzpatrick believes it's not necessary to duplicate the fine work carried on by such organizations as Seed Saver's Exchange, which preserves and collects heirloom vegetable varieties, and North American Fruit Explorers, which preserves old fruit varieties.

Today, five years after its founding, the Center has compiled a most beguiling seed list and plant collection. Only the seeds, however, are sold both at the Plant Shop and through the mail. Within the next two or three years, the Center hopes to be able to offer plants through the mail.

The Center's 1992 seed list reflects its interests. The scattering of vegetables, such as 'Tennis Ball' lettuce and white eggplant, were grown by Jefferson at Monticello. The great majority of offerings consist of annual, biennial, and perennial flowers.

The list includes hard-to-find ornamentals such as a fragrant white-flowered four-o'clock (*Mirabilis longiflora*), a 30-foot purple-flowered hyacinth bean climber favored by Jefferson (*Dolichos lablab*), and species marigolds. Fitzpatrick is particularly excited about the first-time offering of what he calls his "Cypress Vine." Jefferson grew these plants and Fitzpatrick has received numerous requests for them since coming to the Center. He has finally built up enough seed stock to offer *Ipomoea quamoclit*, and a native biennial with similar fine-textured foliage, the standing cypress (*Ipomopsis rubra*).

Popular biennials, such as foxglove (*Digitalis purpurea*), and perennials, such as cardinal flower (*Lobelia cardinalis*), are also included on the Center's seed list. All these plants were grown in gardens a

century or more ago.

Fitzpatrick also shares Jefferson's and McMahon's interest in choice North American plants. To this end, he propagates some of our most beautiful native species, including heucheras, Jeffersonias, and trilliums.

The last has been so overcollected in the wild that it is on many endangered lists. Most commercial nurseries do not have the resources to devote the five to seven years needed to build up a large stock of trilliums

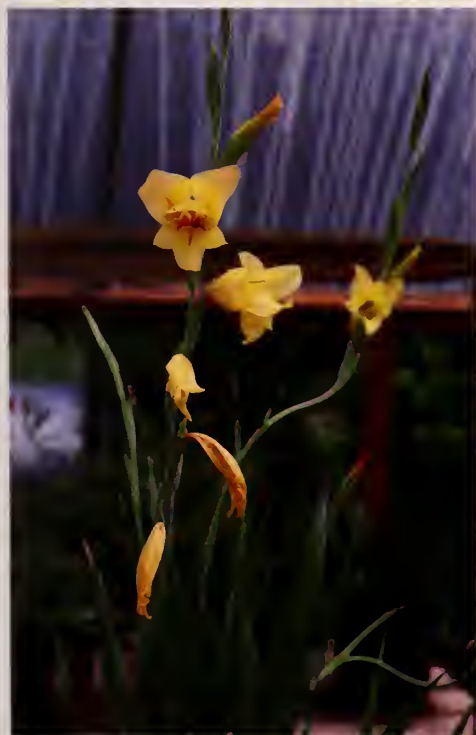
grown from seed. As an educational and preservational organization, the Center can do this.

The Thomas Jefferson Center for Historic Plants is a unique national institution and gardeners throughout our country are richer for it. "We are here to prevent as many disappearances as we can," Fitzpatrick says, "and to ensure that the wealth of garden plants we have inherited is passed on to the future."

To be put on the Center's mailing list,

send a postcard with your name and address to: The Thomas Jefferson Center for Historic Plants, Monticello, P.O. Box 316, Charlottesville, Virginia 22902.

Patricia A. Taylor is a writer who loves to garden. She is the author of the book *Easy Care Perennials* (Simon & Schuster, 1989) and has written garden articles for *The New York Times*, *Newsday*, *American Horticulturist*, and *Fine Gardening*.



Top left: John T. Fitzpatrick, director of The Center for Historic Plants, inspecting *Gladiolus x gandavensis*. **Top right:** Dotted mints (*Monarda punctata*), lovely North American natives, are among the plants available this year at the Center. **Bottom left:** The Center is currently growing for future sale a stock of *Gladiolus x gandavensis*, a hybrid developed in the 1840s. **Bottom right:** The Center offers plants of the blue annual, *Lobelia erinus* 'Flore pleno.'

photos by Patricia A. Taylor

SNOWFLOWERS



by Toni Brinton

photos by Mary Lou Wolfe



Helleborus niger (Christmas rose).

We can create interesting winter gardens in various ways: trees with textured bark; evergreens to relieve the gray days and brown earth; some shrubs that bloom early in the year. But it's the perennials that bloom in the snow that are always surprising and therefore doubly delightful. Here are three such possible perennials for your winter garden.

Daphne odora 'Marginata,' despite the daphne's temperamental nature, has blossomed by my greenhouse door for the past two winters in March. Previously it had not thrived and looked poorly, until on a Pennsylvania Horticultural Society garden visit I admired Gertrude Wister's flourishing plant. She advised me to find a protected spot against a south-facing wall and to further insulate the plant against winter's harshness with light boughs.

In 1990, covered with extra Christmas greens, the daphne lost all its leaves but boasted blossoms from almost every branch. Then in 1991, the insulation was layers of plastic webbing with leaves in the interstices. The winter was truly mild; the waxy white-margined leaves suffered no damage, and the pinkish white bloom was prolific.

I have certainly spoiled this plant with undue care, but the wonderful sweet fragrance added to the attractive form and habit of the whole plant make it worth the effort. My plant came from the Logee's Greenhouses, and they expected me to grow it indoors, but Mrs. Wister's successful example encouraged me to try it outdoors. I am now unable to find this plant listed for sale, so if any reader knows of a source please do let us know through *Green Scene*.

Primula abchasica blooms in late February or early March. Hard winters don't bother it a bit. It is easy and giving. Starting in late January, you can see tiny purple buds deep inside the folded leaves. This plant just waits for some encouraging warm sun before pushing up its bright purple flowers. Other primroses, such as *Primula x pruhoniana* (syn. *Primula x juliana*) are almost as early. They all endure snowstorms without suffering damage.

West Chester rock gardener Anita Kistler tells me that Lincoln Foster brought *P. abchasica* seed from Russia, and was successful in germinating it. Henry Francis du Pont, reading of Foster's success, ordered 100 plants for Winterthur. Always generous, though he had only a few plants, Linc Foster shared what he had and now



Above: *Daphne odora* 'Marginata.'
At right: *Primula abchasica*.

Winterthur is the only source that I know of. (H. Lincoln Foster with his wife Timmy were, before their deaths in 1988-89, the royal family of America's Rock Gardeners. Linc wrote *Rock Gardening*, still the American bible on the subject; he was a president Timmy edited the *Bulletin of the American Rock Garden Society* for many years. They gardened and hybridized together on six fantastic acres in northern Connecticut called Millstream House.)

Helleborus niger, the Christmas rose, is my favorite winter flower. It doesn't bloom at Christmas, but begins late February, early March and continues for a good two months. This plant has prospered in our forest floor. Some have grown to enormous size (15-18" across), spreading by self-sown seedlings. We have had as many as 16 blooms on a single plant. The pure white petals and clear yellow stamens are as pristine as the snow that often blankets and surrounds them. After being pollinated these flowers turn a soft rose and stay on the plant, adding to the overall effect. A friend gave me a few seedlings, and Wayside Gardens and Nancy Goodwin of Montrose Nursery, carry *Helleborus*, if you are not so fortunate.

All perennials when they are young are better planted in the spring so that they can have the summer to grow strong before winter's blasts. I would give the above three plants a summer to grow on.



SOURCES

Montrose Nursery
P.O. Box 957
Hillsborough, NC 27278
(919) 732-7787

Logee's Greenhouses
55 North St.
Danielson, CT 06239

Wayside Gardens
Hodges, SC 29695
1 (800) 845-1124

Toni Brinton gardens in Chadds Ford, chairs the John Bartram Association, serves on the Arboretum Committee at Tyler Arboretum, and has worked in various roles for the Philadelphia Flower Show.

PLANT SOCIETIES' MEETINGS IN 1992

 by Carol Lukens



photo by Margaret Hudson

Visitors to the Delaware Valley Hosta Society meeting at Mark Schulman's garden in Kendall, N.J., inspect hostas before the auction.

AFRICAN VIOLET SOCIETY OF PHILADELPHIA

African Violet Show & Plant Sale

May 2, 1-9 pm
May 3, 12-4 pm
Plymouth Meeting Mall,
Upper Level
Germantown Pike
(exit 25 off Pa. Turnpike)
Plymouth Meeting, PA 19462

Contact:

Peggy DePhillippo or
1074 Grange Ave.
Collegeville, PA 19426
(215) 489-4744

Margaret Cass
920 Andorra Rd.
Lafayette Hill, PA 19444
(215) 836-5467

AFRICAN VIOLET SOCIETY OF SPRINGFIELD, DELAWARE COUNTY

42nd Annual Show & Sale

May 1-3, 12-9 pm
Springfield Mall
Baltimore Pike & Route 320
Springfield, PA 19064

Contact:

Elizabeth G. Roth
105 Carleton Rd.
Wallingford, PA 19086
(215) 566-6272

MID-ATLANTIC BONSAI SOCIETY

Ninth Annual Mid-Atlantic Bonsai Festival

Featured guests include: John
Naka, Hotsumi Terakawa,
Pedros Morales, James
Gillespie and Dr. David
Andrews

April 24, 25 & 26
Sheraton Hotel
Mahwah, NJ

Full registration for the three-day seminar, including buffet on Saturday, \$100.00.
Friday evening and Saturday, \$70.00. Saturday will feature banquet and auction.
Sunday, \$40.00.

Contact:

Kurt Wittig
17 Old Mill Drive
Denville, NJ 07834
(201) 361-6642

BRANDYWINE CONSERVANCY & BRANDYWINE RIVER MUSEUM

Plant Sale

May 9 & 10
9:30-4:30 pm
Brandywine River
Museum
Route 1 & 100
Chadds Ford, PA 19317

Contact:

Lucinda Laird
Brandywine Conservancy
P.O. Box 141
Chadds Ford, PA 19317
(215) 459-1900

PHILADELPHIA CACTUS & SUCCULENT SOCIETY

Philadelphia Flower Show
March 8-15
Philadelphia Civic Center
34th & Civic Center Blvd.
Philadelphia, PA 19104
Admission to Flower Show: \$10.50

Plant Sale

September 14 & 15
9 am-5 pm
Location TBA
Lahaska, PA 18931

Contact:

Necija Van Basselaere
1120 Brennan Drive
Warminster, PA 18974
(215) 692-2784

DELAWARE VALLEY CHRYSANTHEMUM SOCIETY, INC.

Annual Mum Show

October 24, 1-5 pm
October 25, 10-5 pm
Longwood Gardens
Kennett Square, PA 19348
Admission: \$8.00

Plant Sale

May 16, 10-4 pm
Tyler Arboretum
Lima, PA 19037

Contact:

Norman C. Yeoman, Jr.
116 Bondsville Rd.
Downingtown, PA 19335
(215) 269-2226

CHRYSANTHEMUM SOCIETY OF SOUTH JERSEY

Annual Mum Show

November 9 & 10, 1-5 p.m.
Gloucester County College
Deptford Township
Sewell, NJ 08080

Mum Cuttings Sale

June 5, 3-8 p.m.
June 6, 9-5 p.m.
Home of Edwin Erickson
323 Columbia Avenue
Pitman, NJ 08071

Contact:

John Kelly
122 Princeton Ave.
Gloucester, NJ 08030
(609) 456-3349

DELAWARE VALLEY DAFFODIL SOCIETY

Daffodil Show

April 18, 1-5 pm
April 19, 10-5 pm
Longwood Gardens
Kennett Square, PA 19348
Admission: \$8.00

Bulb Sale

September 26, 9-3 pm
Tyler Arboretum
Lima, PA 19037

Contact:

Joy MacKinney
535 Woodhaven Road
West Chester, PA 19382
(215) 399-1211

NEW JERSEY DAFFODIL SOCIETY

17th Annual New Jersey Daffodil Show

April 21, 12:30-5:30 pm
April 22, 10-3 pm
Frelinghuysen Arboretum in the
Haggerty Building
Morristown, NJ 07960

Contact:

Paula Stuart
394 Charlton Ave.
South Orange, NJ 07079
(201) 763-0935

DELAWARE VALLEY DAYLILY SOCIETY

Flower Show

July 11, 10-6 pm
The Court at King of Prussia
Rt. 202
King of Prussia, PA 19406

Plant Sale

September 11
9-12 pm
Tyler Arboretum
Lima, PA 19037

Contact:

Joan Jackson
22 Summit Rd.
Malvern, PA 19355
(215) 341-2354

DELAWARE VALLEY FERN & WILDFLOWER SOCIETY

Field trip to Pocono Environmental Education Center

June 25-28
Fee: \$90

Contact:

Dana Cartwright
263 Hillcrest Rd.
Wayne, PA 19087
(215) 687-0918

AMERICAN GOURD SOCIETY INC.

30th Annual Gourd Show

October 3, 12-6 pm
October 4, 9-5 pm
Fairgrounds
Mt. Gilead, Ohio 43339
Fee: \$1.00

Contact:

John Stevens
P.O. Box 274
Mt. Gilead, OH 43338
(419) 946-3302

HERB SOCIETY OF AMERICA, DELAWARE VALLEY UNIT

Plant Sale

May 16, 10-3 pm
Prallsville Mill
Route 29
Stockton, NJ 08559

Contact:

Joan Schumacher
25 Rosemore Drive
Chalfont, PA 18914
(215) 997-1549

HERB SOCIETY OF AMERICA, PA HEARTLAND UNIT

"Herbal Delights" Symposium

June 22 & 23
Time: TBA
Albright College
Reading, PA 19612-5234

Contact:

Darlene Henning
173 Deysher Road
Fleetwood, PA 19522
(215) 987-6184

HERB SOCIETY OF AMERICA, PHILADELPHIA UNIT

Annual Herb Sale

May 14, 10-2 pm
Douglas Farm
Pughtown Rd.
Kimberton, PA 19442

Contact:

Joyce Douglas
P.O. Box 672
Pughtown Rd.
Kimberton, PA 19442
(215) 933-1492

HERB SOCIETY OF AMERICA, SUSQUEHANNA UNIT

Annual Herb & Geranium Sale

May 2, 9-1 pm
Farm and Home Center
1383 Arcadia Road
Lancaster, PA 17601

Contact:

Genevieve Libhart
1980 Marietta Pike
Marietta, PA 17547
(717) 426-1527

TBA — to be announced

the green scene / january 1992

HIGHLAND HISTORICAL SOCIETY**Garden Party and Herb Sale**

May 20, 10-3 pm
 May 21, 11-6 pm
 7001 Sheaff Lane
 Fort Washington, PA 19034
 Fee: \$22.00 for lecture, luncheon and plant sale,
 May 20 only; \$3.00 for plant sale

Contact:

Catherine G.
 Hoffman-Lynch
 7001 Sheaff Lane
 Ft. Washington, PA
 19034
 (215) 641-2687

DELAWARE VALLEY HOSTA SOCIETY**Slide/Lecture: Dr. Dick Ward**

March 7, 1:30-4 pm
 Ramada Inn
 Routes 1 & 202
 Chadds Ford, PA 19317

Plant Sale

June 27, 2 pm
 Home of
 Max & Melissa Levy
 43 Harlech Dr./Anglesey
 Wilmington, DE 19807

Contact:

Warren Pollack
 202 Hackney Circle
 Wilmington, DE 19803
 (302) 478-2610

PHILADELPHIA CHAPTER OF IKEBANA INTERNATIONAL**Ohara Demonstration by**

Ronell Douglass, 3rd Degree
 Master

November 21, 10-12 pm
 Radnor Memorial Library
 114 W. Wayne Ave.
 Radnor, PA 19087
 Guest Fee: \$5.00

Contact:

Ronell Douglass
 57 Allendale Rd.
 Wynnewood, PA 19096
 (215) 642-2885

Ichijo Demonstration by Jane

Morrison, Teacher

April 23, 10-12 pm
 First Presbyterian Church
 Haddonfield, NJ 08033
 Guest Fee: \$5.00

DIAMOND STATE IRIS SOCIETY**Iris Show**

May
 Time TBA
 Location TBA

Plant Sale

July 11, 10-2 pm
 Location TBA

Contact:

Mrs. Arthur F. Martin
 116 Meriden Drive
 Hockessin, DE 19707
 (302) 998-2414

AMERICAN IVY SOCIETY, EASTERN CHAPTER**2nd Annual Ivy Show**

September 27, 11-5 pm
 Longwood Gardens
 Kennett Square, PA 19348
 Admission: \$8.00

Quarterly Meetings

1st Saturday in February,
 May, August,
 November
 9:30 am
 Longwood Gardens
 Kennett Square, PA
 19348
 Admission: \$8.00

Contact:

Edward Broad Bent
 c/o Longwood Gardens
 P.O. Box 501
 Kennett Square, PA
 19348-0501

Russell A. Windle
 P.O. Box 179
 Lionville, PA 19353
 (215) 363-6481

MARIGOLD SOCIETY OF AMERICA**Annual Meeting**

TBA
 Annual Dues: \$12.00

Slide Set:

"Beauty with Marigolds"
 To borrow — \$5.00

Contact:

Jeannette Lowe
 394 West Court St.
 Doylestown, PA 18901
 (215) 348-5273

NATIVE PLANT SOCIETY OF NEW JERSEY**Annual Members Meeting**

Date TBA, 10 am
 Cook College Campus
 New Brunswick, NJ 08903

AG Field Day Plant

Exchange
 Date TBA, 9-4 pm
 Cook College Campus
 New Brunswick, NJ
 08903

Contact:

Robert L. Swain
 Office of Continuing
 Professional
 Education
 Cook College
 P.O. Box 231
 New Brunswick, NJ
 08903-0231
 (908) 928-0600

CENTER CITY ORCHID SOCIETY**Trip to Regional Orchid**

Judging
 February 19, meet 6:15 pm at
 Pennsylvania
 Horticultural Society to
 carpool to Judging site.

Monthly Meetings

3rd Monday, 7 pm
 Pennsylvania
 Horticultural Society
 325 Walnut St.
 Philadelphia, PA
 19106-2777

Contact:

Mary Ann Skaziak
 3023 Edgemont Street
 Philadelphia, PA 19134
 (215) 751-4775 (W)
 (215) 423-8224 (H)

DELAWARE ORCHID SOCIETY, INC.**Monthly Meeting & Show Table**

Second Thursday of each
 month except June, July &
 August, 8 pm
 Brandywine Masonic Hall
 2601 Foulk Road
 Wilmington, DE 19810

Annual Plant Auction

April 9, 8 pm
 Brandywine Masonic Hall
 2601 Foulk Road
 Wilmington, DE 19810

Contact:

Mr. A. A. Chadwick
 520 Meadowlark Lane
 Hockessin, DE 19707
 (302) 656-1091

GREATER PHILADELPHIA ORCHID SOCIETY**Monthly Meeting**

4th Thursday (3rd in Nov. &
 Dec.), 8 pm. Speaker,
 show table, refreshments.
 Merion Friends Activity
 Center
 615 Montgomery Avenue
 Merion, PA 19066

Orchid Auction

September 24, 7:30 pm
 Merion Friends Activity
 Center
 615 Montgomery Ave.
 Merion, PA 19066

Contact:

Lois Duffin
 7411 Boyer Street
 Philadelphia, PA 19119
 (215) 248-3626

SANDPIPER ORCHID SOCIETY**Monthly Meeting**

Mays Landing Library
 2 South Farragut Avenue
 Mays Landing, NJ 08330
 (609) 625-2776

Show

Fall
 Date, Time and Location
 TBA

Contact:

Judy Mutschler
 2033 Philadelphia
 Avenue
 Egg Harbor, NJ 08215
 (609) 965-0048

4th Thursday (Please confirm
 date before attending)
 7:00 p.m. Planting and
 cultural demonstrations
 8:00 p.m. Regular Meeting

SOUTHEASTERN PENNSYLVANIA ORCHID SOCIETY**Orchid Show**

February 6-10, Mall hours
 The Court at King of Prussia
 King of Prussia, PA 19406

Plant Auction

October 14, 7 pm
 All Saints Episcopal
 Church
 Gypsy Lane at
 Montgomery
 Narberth, PA 19072

Contact:

Mrs. George Robinson
 (Deborah)
 2604 Horseshoe Trail
 Chester Springs, PA
 19425-8912
 (215) 827-7445

SOUTH JERSEY ORCHID SOCIETY**Monthly Meeting**

3rd Sunday of every month
 except December, 1 pm
 Wenonah United Methodist
 Church
 105 E. Willow St.
 Wenonah, NJ 08080

Plant Auction

3rd Sunday in November,
 1 pm
 Wenonah United
 Methodist Church
 105 E. Willow St.
 Wenonah, NJ 08080

Contact:

Barbara Inglessis
 204 Winding Way
 Moorestown, NJ 08057
 (609) 722-7037

PERENNIAL PLANT ASSOCIATION**10th Annual Perennial Plant Symposium**

July 26-31, Time TBA
 Stouffer City Towers Hotel
 Cleveland, Ohio
 Fee: Varies with activity

Contact:

Dr. Steven Still
 3383 Schirtzinger Rd.
 Hilliard, OH 43026
 (614) 771-8431

AMERICAN PRIMROSE SOCIETY, DORETTA KLABER CHAPTER**Garden Visits**

April TBA
 Time TBA
 Location TBA

Plant Sale

June TBA
 Time TBA
 Location TBA
 Members only

Contact:

Anita Kistler
 1421 Ship Rd.
 West Chester, PA 19380
 (215) 696-8020

AMERICAN RHODODENDRON SOCIETY,**GREATER PHILADELPHIA CHAPTER****Azalea & Rhododendron Flower Show**

May 9, 11-3 pm
 Widener Education Center
 Morris Arboretum of the
 University of
 Pennsylvania
 100 Northwestern Avenue
 (between Germantown
 and Stenton Avenues)
 Chestnut Hill
 Philadelphia, PA 19118

Plant Sale

May 9, 10-4 pm
 Area opposite the
 Widener Education Center
 Morris Arboretum of the
 University of
 Pennsylvania
 Philadelphia, PA 19118

Contact:

Brian T. Keim, President
 1189 Sewell Lane
 Rydal, PA 19046
 (215) 576-6494 (H)
 (215) 864-8610 (W)

AMERICAN RHODODENDRON SOCIETY, VALLEY FORGE CHAPTER**Flower Show at Longwood Gardens**

May 10, 1-5 pm
 Kennett Square, PA 19348
 Longwood admission fee:
 \$8.00

Plant Sale

May 2, 9-3 pm
 May 3, 11-3 pm
 Jenkins Arboretum
 631 Berwyn-Baptist Rd.
 Devon, PA 19333

Contact:

Eva Jackson
 730 Limehouse Road
 Radnor, PA 19087
 (215) 687-2289

AMERICAN ROCK GARDEN SOCIETY, DELAWARE VALLEY CHAPTER**Exhibit**

Philadelphia Flower Show
 March 8-15
 Philadelphia Civic Center
 34th & Civic Center Blvd.
 Philadelphia, PA 19104
 Admission to Flower Show:
 \$10.50

Monthly Meeting

1st or 2nd Saturday of
 each month
 10-12 pm
 Location: TBA in
 newsletter
 Annual fee: \$5.00

Contact:

Morris West
 P.O. Box 75
 Brogue, PA 17309
 (717) 244-0438

continued

DEL-CHESTER ROSE SOCIETY

Annual Rose Show

June 13
Entries 7-9:30 am
Show 1-7 pm
Longwood Gardens
Kennett Square, PA 19348
Longwood admission fee:
\$8.00

Monthly Meeting

March, April, May,
September, October,
November
4th Monday, 8 pm
Delaware Valley Christian
Church
Old Middletown Rd.
(off Rt. 352 across from Penn
State Lima Campus)
Lima, PA 19037

Contact:

Patricia Bilson
127 Gable Rd.
Paoli, PA 19301
(215) 644-1860

Entries (open to all) must be

in place by 11 am
Show 1-9 pm
Moorestown Mall
Route 38 and Lenola Road
Moorestown, NJ 08057

117 Farmdale Road
Mt. Holly, NJ 08060
(609) 267-3809

DELAWARE VALLEY WATER GARDEN SOCIETY

Day trip to Water Garden of
interest Plant Sale
TBA TBA

Contact:

Bill Fogle
507 Brookwood
Wayne, PA 19087
(215) 687-3105 (H)
(215) 768-2657 (W)

PHILADELPHIA ROSE SOCIETY

46th Annual Rose Show

June 6, 7-5 pm
Widener Education Center
Morris Arboretum of the
University of
Pennsylvania
Philadelphia, PA 19118
Fee: \$3.00, free to exhibitors

Pruning Demonstration

March 28, 1-3 pm
Rain date March 29
Morris Arboretum Rose
Garden
100 Northwestern Avenue
(entrance)
Philadelphia, PA 19118

Contact:

Pat Pitkin
923 Springwood Dr.
West Chester, PA 19382
(215) 692-4076

WEST JERSEY ROSE SOCIETY

Annual Rose Show

June 6

Contact:

Gustave Banks

Additional Plant Society Information

For list of other local and national plant society contacts, check with the Pennsylvania Horticultural Society Library (215-625-8256).

For Future Listings

Green Scene publishes a list of area plant society meetings and plant sales annually in the January issue of *Green Scene*. DEADLINE: September 15. Please follow format used here. Write to: Editor, *Green Scene*, PHS, 325 Walnut Street, Philadelphia, PA 19106-2777.



illustration by Julie Baxendell

WINTER GARDENS

by Kathleen Mills

windows take on a special significance. We are no longer out working the soil, our garden activity is limited to gazing out our windows. If well planned, the views can be wonderful. Mixing textures and forms will make our gardens as interesting in winter as in any other season (well almost!).

Birds bring nature and color to our windowsill. So enhancing a view can be as simple as hanging a bird feeder — but few gardeners can stop here. We want to be dazzled by plants.

evergreens

The variegation and shape of evergreens

can be most appreciated during the winter months when they become the focal point of the garden. Keep selection and siting in mind as you plan a garden. There are a myriad of colors and forms to choose from. The majestic Oriental spruce (*Picea orientalis*) grows to at least 50 feet and has a rich dark-green color. The dwarf spruce, *Picea glauca* 'Echiniformis,' has a gray hue and its pincushion shape grows to only 30 inches in height. Skyrocket juniper (*Juniperus virginiana* 'Skyrocket') grows to 25 feet in a narrow conical shape, spreading to less than one foot in width. Boxwood (*Buxus sempervirens*) and yews (*Taxus* sp.)

When you look out the window into your garden, are you pleased with what you see? Is there variety in texture and form? Is there color? Or, would you prefer to pull the curtain shut and wait for spring?

Creating a garden that maintains interest year-round is difficult and the winter season presents a special challenge that requires the extra effort of careful planning. The months from November to March are spent largely indoors, when the views from our

Winter Blooming Trees and Shrubs

Abeliophyllum distichum
Chimonanthus praecox (wintersweet)
Cornus mas (dogwood)
Corylopsis pauciflora (winterhazel)
Daphne odora (winter daphne)
Erica carnea (heath)
Hamamelis mollis (Chinese witchhazel)
Hamamelis vernalis (witchhazel)
Jasminum nudiflorum (winter jasmine)
Lonicera fragrantissima (honeysuckle)
Rhododendron mucronulatum (snow azalea)
Sarcococca hookerana (sweet box)

Feb.
Jan./Feb.—Mar.
Mar.
Feb.
Feb.
Jan.—Spring
Feb.
Feb.
Feb./Mar.
Feb.—Apr.
Jan.
Feb.—Mar.

Winter Blooming Perennials and Bulbs

Anemone blanda (lily of the field)
Bergenia ciliata (winter begonia)
Chionodoxa luciliae (glory of the snow)
Crocus tomasianus (crocus)
Cyclamen coum (Alpine violet)
Eranthis hyemalis (winter aconite)
Galanthus sp. (snowdrop)
Helleborus niger (Christmas rose)
Helleborus orientalis (lenten rose)
Leucojum vernum (spring snowflake)

Feb.—Mar.
Mar.
Mar.
Feb.—Mar.
Feb.—Mar.
Jan.—Feb.
Jan.—Feb.
Jan.—Mar.
Jan.—Mar.
Mar.

come in many cultivars and varieties. They tolerate pruning, making them ideal for hedges and topiary. The variety of evergreens fits every description of size and shape and will form the structure of your winter garden.

berries and blossoms

The berries and flowers of many trees and shrubs provide a welcome splash of color. *Pyracantha* spp., hollies (*Ilex* spp.), both deciduous and evergreen, and witch-hazels (*Hamamelis* spp.) are reliable winter performers. Other, lesser known woody plants can also effectively brighten your garden. Winter jasmine (*Jasminum nudiflorum*) is a gracious spreading shrub, which left to cascade over a wall, creates a wonderful picture of a delicate yellow waterfall in February. 'Sparkleberry' holly* (*Ilex verticillata* x *Ilex serrata* 'Sparkleberry') is a show-stopper, dropping its leaves in late autumn to reveal limbs laden with cherry-red berries that persist well into January.

deciduous trees and shrubs

Deciduous plants add zest to your garden. In winter, branching habits and bark textures become significant parts of the landscape. A floodlight shining through a dogwood tree (*Cornus florida*) creates a warm effect on a cold, winter night. And imagine the peeling, cinnamon-colored bark of paperbark maple (*Acer griseum*) peeking through a light cover of snow.

herbaceous plants

Herbaceous plants can extend color, form and texture through the winter season. The sound of dried flower stalks of ornamental grasses will delight you as they sway in the wind. Available in many sizes, their form and texture are a dramatic addition to any garden.

Picture the pale purple of glory of the snow (*Chionodoxa luciliae*) peeking through

* 1988 Pennsylvania Horticultural Society Gold Medal Plant Award recipient.

your lawn in March, followed by the nodding white heads of spring snowflake (*Leucojum vernal*). These bulbs will have provided you with pleasure long before the lawn is ready for its first cut.

For a splash of color near a door, or just outside a window, try winter pansies (*Viola* hybrids). Their cheerful faces bloom in all but the coldest months. Ornamental kales and cabbages, planted in September, lend texture and color to a garden long into the winter.

As you tend your garden and make changes this spring, remember the winter view from inside your house. With careful thought to form, texture, and color and special attention to what a plant offers a garden during the winter months, you can improve next winter's view.

Read About Winter Gardening

These books are available through The Pennsylvania Horticultural Society Library.

Color in the Winter Garden, Graham Stuart Thomas, J.M. Dent & Sons Ltd., London, 1971.

The All-Season Garden, John Kelly, Viking-Penguin Inc., New York, 1987.

The Winter Garden, Stanley Schuler, The Macmillan Company, New York, 1972.

Winter Gardens, Sonia Kinahan, The Overlook Press, New York, 1985.

LIBRARY EXPANDS HOURS / PLANT CLINIC MONDAY EVENINGS

Starting on January 6, The Pennsylvania Horticultural Society Library will be open on Mondays from 9 am to 7 pm. (Regular hours, 9 am to 5 pm will continue from Tuesday through Friday.)

Also on Monday evenings, Kathy Mills will conduct a plant clinic from 5 pm to 7 pm.

The Plantfinder

A free service for *Green Scene* readers

If you can't locate a much-wanted plant send your name and address (include ZIP), the botanical and common name of the plant to Plant Finder, *Green Scene*, PHS, 325 Walnut St., Philadelphia, PA 19106.

WANTED

Scilla autumnalis, the starry hyacinth. Contact Mrs. Nicholas R. duPont, P.O. Box 3704, Wilmington, DE 19807.

Statement of Ownership/Management and Circulation (Act of October 23, 1962; Section 4369, Title 39, United States Code)

1. Date of Filing: October 8, 1991. 2. Title of Publication: *The Green Scene*. 3. Frequency of issue: bimonthly. 4-5. Location of Known Office of Publication and Headquarters: 325 Walnut Street, Philadelphia, Pa. 19106. 6. Names and Addresses of Publisher and Editor: Publisher — Pennsylvania Horticultural Society, Philadelphia, Pa. 19106, Editor — Jean Byrne, 325 Walnut Street, Philadelphia, Pa. 19106. 7. Owner: The Pennsylvania Horticultural Society, Philadelphia, Pa. 19106. 8. Known bondholders, mortgages and other security holders holding one percent or more of total amount of bonds, mortgages or other securities: None. 9. Extent and Nature of Circulation:

	Average No. Copies Each Issue During Preceding 12 Mos.	Single Issue Nearest to Filing Date
A. Total No. Copies Printed (new press run)	13,917	13,500
B. Paid Circulation:		
Sales through dealers and carriers, street vendors and counter sales	325	657
Mail Subscriptions	13,099	12,416
C. Total Paid Circulation	13,424	13,073
D. Free distribution by mail, carrier or other means, samples, complimentary and other free copies	402	109
E. Total Distribution (sum of C and D)	13,826	13,182
F. Copies not distributed:		
Office use, left over, unaccounted, spoiled after printing	91	318
Return from news agents	0	0
G. Total (sum E and F should equal net press run in A)	13,917	13,500

I certify that the statements made by me above are correct and complete.
Jean Byrne, Editor

33



Give a year-round gardening gift

a *GREEN SCENE* Subscription to your family or friends.
A BARGAIN AT \$9.75:

SEND SUBSCRIPTION TO:

FROM:

Return check and coupon to:

Green Scene, PHS
325 Walnut Street
Philadelphia, PA 19106

1000+ SEED items: Perennials, Natives, Shrubs, etc. . . . 100s at 25 cents each. \$1 for complete list. SASE for order form. **SEED SOURCE, Balsam Grove, NC 28708**

PERENNIALS

Top-quality nursery propagated, northern grown perennials for the fine and unique gardener. Featuring exclusively McEwen Siberian Iris Informative catalog, \$1.50
FIELDSTONE GARDENS, INC.
620 Quaker Lane
Vassalboro, ME 04989-9713

DISTINCTIVE PENNSYLVANIA-GROWN PLANTS

for gardening and landscaping. Many scarce, rare and unusual selections along with hardy natives available. Call or write for FREE catalog.
APPALACHIAN GARDENS
Box 82
Waynesboro, PA 17268-0082
(717) 762-4312

AMERICAN GREENHOUSE SYSTEMS

- Maintenance on ALL greenhouses — IBG, Janco, L&B, Rough, National, etc.
- Refurbishing older greenhouses
- Sales of Poly, Lexan and Glass Enclosures
- Redwood and Aluminum Solariums and Conservatories
- Yearly Maintenance Contracts

P.O. Box 817 Malaga New Jersey 08328
(609) 694-3500 FAX (609) 694-1840
(800) 676-3505

Outdoor Furniture Specialists Hill Co.

Create an exciting outdoor living area with a visit to the Hill Co. Distinguished collection of outdoor furniture and accessories, wicker, and rattan. Showrooms fully stocked year round.
(215) 247-7600
8615 Germantown Ave.
Chestnut Hill

**ROBERT W. MONTGOMERY
LANDSCAPE NURSERY**
Chester Springs, PA
is proud to stage the central feature
in the 1992 Philadelphia Flower Show
"Horizons for Discovery"

Reservations are now being taken for
Montgomery's Flower Show Bus Tour
Flower Show Tickets on sale.

Robert W. Montgomery Landscape Nursery is located on Route 113 in beautiful Chester Springs, Pa. A full-service nursery, garden center and greenhouses with over 1,000 varieties of mature-size perennials and a trained staff of horticulturalists make Montgomery's your total outdoor resource center. Watch for the Spring opening of Montgomery's Top-of-the-Barn Patio Shop.

CALL EARLY FOR LANDSCAPE DESIGN CONSULTATION

and be assured of a timely spring installation of a beautiful, functional landscape.

The Philadelphia Flower Show's
5-time "Best in Show" Winner
215-363-2477
Open 7 days a week

Plants for Sale

- *Sciadopitys verticillata* — approx. 14 ft., \$2,800
 - *Acer palmatum dissectum* 'Atropurpureum' 10-12 ft., \$3,200
 - *Pinus bungeana* — 12-14 ft., \$1,200
- Many other plants available!
James Farr
(215) 884-1720

CONTEMPORARY STRUCTURES FOR HOME AND GARDEN

At last! Great new designs for those garden necessities. Arbors, Trellises & Gates, built in steel to last. Write or call for catalog.

The Painted Garden, Inc.
304 Edge Hill Road
Glenside, PA 19038
(215) 884-7378

ARCHITECTURE, SITE PLANNING GARDEN DESIGN

Todd R. Phillippi, AIA
Complete commercial and residential design services.
1325 Old Lincoln Hwy., Langhorne, PA 19047
(215) 750-8770

The Philadelphia Flower Show.
Landscape Design and Planning.
Installation and Renovation.

For the Country Garden
Herbs from the Finest Growers
Over 100 Varieties

The Best Plants Featuring
The Styer Award Winners
Garden Accessories and Necessities
Lead Stone Terra-Cotta
Tools to Last a Lifetime

Water Gardening Pool Supplies Books
Bonsai Tools Pottery Plants
Shade Color Fragrance
Experience the Pleasure of Gardening

J. Franklin Styer Nurseries
Since 1890

Celebrating 100 Years in Horticulture
Open Seven Days A Week
(215) 459-2400

THE UNIQUE BEAUTY OF ORNAMENTAL TREES

Dealers and locators of large, mature standard and rare plant material, including arboretum-quality specimens, serving landscape architects, designers, contractors, and private individuals.

Our services also include:

- planting and transporting of large trees
- assessing and renovating mature collection and estate gardens
- we will purchase large trees.

TREE TRANSFERS INC.
(215) 635-2310

DISCOVER YOUR HIDDEN GARDEN

Low-voltage lighting systems for your garden, deck, patio, pool, spa or greenhouse.

- safe, reasonably priced and economical to operate
 - installation does not disrupt existing plantings
- Call (215) 376-1181 or 374-2036 for a no-obligation consultation and price estimate.

THE LANDSCAPE LIGHTING COMPANY

JUST A FEW REASONS TO VISIT WATERLOO GARDENS DELAWARE VALLEY'S LARGEST GARDEN CENTER

50-Acre Nursery:

- Award-Winning Landscape Design
 - Largest selection of seeds and bulbs
 - Gardening Workshops & Classes:
All-New Series beginning Feb. 29 —
Call for brochure!
 - Landscape Design Workshops
and Seminars in February
 - English Direct-Import Gardening Selection
• Gardening Book Collection
(Great for "Armchair Gardeners")
• Seed Starting Equipment
• Wonderful Selection of Patio &
Garden Furniture at PRE-SEASON PRICES
 - Fine Selection of Orchids, Bonsai & Topiaries
 - Bird Feeders • Bird Houses • Bird Seed
 - Exquisite Gift & Gourmet Shops
- If you are not already receiving our
"Garden Gate" quarterly newsletter, just call
and we'll put you on our mailing list!*

— Waterloo Gardens —

Two Locations — Open 7 Days a Week
Exton — 200 N. Whitford Rd. (215) 363-0800
Devon — 136 Lancaster Ave. (215) 293-0800

PENNSYLVANIA'S BEST

Oak Bark Mulch — Dark, Fine Shredded. Picked up or delivered in bulk. Mushroom Soil & Topsoil also available.
(215) 483-8922 (215) 482-1711

THE CLASSIC LOOK OF A GARDEN

Designed for today's lifestyle.
Plantings, Rock & Boulder Work, Artificial Ledges and Waterfalls. Designed, installed & warranted exclusively by E.G. WITOMSKI CO. Since 1976.
Inquire (215) 565-8826

AFRICAN VIOLETS & GESNERIADS

America's Finest — WRITE for 1991 catalog and tips, 50¢. VISIT our lovely greenhouses. FISCHER GREENHOUSES, Poplar Ave., Linwood, NJ 08221 (609) 927-3399. Open daily, incl. Sunday.

NURSERIES! GARDEN CENTERS!

Green Scene, the bimonthly magazine of the Pennsylvania Horticultural Society, is available now as an over-the-counter sales item. For details on discounts call or write Joe Robinson at PHS, 325 Walnut Street, Philadelphia, PA 19106-2777 (215) 625-8280.

**GET THE LATEST ON GARDEN EVENTS
ACROSS THE COUNTRY. The Garden Tourist '92** gives you everything you need to know about nonprofit Garden Tours and Events in one handy Comprehensive Guide. Send check or m.o. for \$8.95 to **The Garden Tourist**, Dept GS, Ste 14A, 290 West End Avenue, New York, NY 10023.

LARGEST SELECTION OF RHODODENDRONS & AZALEAS

on the East Coast with many new varieties. Also Kalmia, Pieris, and many companion plants. Mail order catalog, \$2. **ROSLYN NURSERY**, Dept. GS, Box 69, Roslyn, NY 11576.

WOODLANDERS

RARELY OFFERED DIXIE NATIVES AND INTRODUCTIONS, woody herbaceous, all nursery-grown. Many hardy northward. Send \$1.00 for mail-order list.

WOODLANDERS GS

1128 Colleton Ave., Aiken, SC 29801

LIGHTING BY FILLMAN

Specializing in

LANDSCAPE • GARDEN • DECORATIVE
Lighting

DESIGN • INSTALLATION • SERVICE

Also — Patios • Decks • Driveways • Walks

G. LYNN FILLMAN (215) 766-7645

COMFORTABLE GARDEN FURNITURE

English Regency Sale

Carefully Hand-Forged

Entirely Hand-Riveted

Fred B. Odell

6209 Upper York Road

New Hope, PA 18938

(215) 794-8967

AFRICAN VIOLETS

100 varieties, standard, micromini, miniature, trailers, variegated types. Greenhouses open daily. Cultural book, \$6.95 ppd. Color catalog 50¢. TINARI GREENHOUSES, 2325 Valley Road, Huntingdon Valley, PA 19006 (215) 947-0144

PERENNIAL FLOWER PLANTS

Over 500 varieties offered in two sizes. Starter plants in cell packs or 1-year-old flowering size. Send \$2 for catalog (refundable) to Perennial Gardens and Nursery, 2566 Brick Church Rd., Weedsport, NY 13166 (315) 626-2482

JAMES FARR LANDSCAPE CONSTRUCTION

- Planting and masonry design/installation
- Pools, waterfalls, drainage systems, Japanese gardens, traditional/contemporary gardens, etc.

(215) 884-1720

Incomparable Barn Transformation — 4,300 sq. ft. of EXQUISITE DETAIL. Built c. 1770, Recreated 1988, Offered 1992. Great Great Room, Kitchen Artist Studio, Hallowed Space, 3 full baths, Fam. Room Loft, MB Suite. 1.1 acres. Plantings of diverse cultures. Kiwi Arbored Reflection Pool, thriving with Golden Fish and Frogs... Highland Sun, Shade, Bog, et al. 1 1/4 hours from Phila. \$274,900. GLOCKER & CO., INC. Kathie Rossé (215) 367-2058.

Wonderful Speakers. Workshops. Tours. ALL ARE INVITED to the 1992 National Council of State Garden Clubs, Inc. convention, May 18-20, 1992. For details, send SASE to Sandy Manthorpe, Chair, 101 W. Rose Tree Road, Media, PA 19063.

COX & CO., INC.

Tree and Landscape Services.

Tree preservation, planting, removals.

(215) 687-1780

Nursery: 15 Airport Rd., Limerick, PA 19468

PROFESSIONAL GARDENER — planting, maintenance of herbaceous plants, shrubs, greenhouse exotics. (215) 822-8502.

MEADOWBROOK FARM

1633 Washington Lane

Meadowbrook, PA 19046

887-5900 Mon-Sat 10-5

AN ENCHANTING EXPERIENCE

awaits you in our gardens & greenhouses. Choose from lovely geraniums, beautiful annuals, thousands of perennials and flowering and evergreen shrubs that are perfect for sunny, shaded or groundcover areas. Accent your garden with rare plants, topiaries, fountains, statuary or beautifully planted patio pots. Unique gifts and baskets of blooming plants are our specialty.

For The Better Things In Gardening
MEADOWBROOK FARM

Bamboo Fencer

Let the Bamboo Fencer create for you custom-designed fencing, gateways, fountains or other structures of bamboo for your garden and home. Beautiful as sculpture, rugged and versatile, bamboo is an "Earth kind" delightful alternative. We build and install or ship to your site. Cat. \$2 (Refundable).

Bamboo Fencer, 31 Germania St.

Jamaica Plain, MA 02130

(617) 524-6137, FAX (617) 524-3596

B&B on Burpee Family Estate

Historic Fordhook Farm, home of pioneering seedsman, W. Atlee Burpee, is open to the public as a Bed and Breakfast Inn. Reserve for Flower Show Week now. The Inn at Fordhook Farm, Bucks County, Pennsylvania (215) 345-1766.

OVER 2,000 KINDS of choice and affordable plants. Outstanding ornamentals, American natives, perennials, rare conifers, pre-bonsai, wildlife plants, much more. Descriptive catalog, \$3. FORESTFARM, 990 Tetherow Rd., Williams, OR 97544

DR. MARTIN POLE LIMA BEAN SEED

1991 Crop of excellent quality and quantity.

For Order Form write Fern Hill Farm,

P.O. Box 185, Clarksboro, NJ 08020.

DEER PROOF PLANTS

HAVE BEAUTIFUL LANDSCAPES
AND YOUR WILDLIFE, TOO

We grow plants resistant to damage by deer. Now your landscapes can be varied, beautiful, and you can live with the Deer, too!

CONTACT US

HILDEBRANT NURSERIES

OLDWICK NJ

"ESTABLISHED 1923"

908-439-2256

GARDEN DESIGN — Design and installation of specialty gardens including perennial borders, herb, kitchen and English cottage gardens. **CAROL MANICONE** (215) 348-4830.

SHANAHANS' WELCOMES SPRING!

- 200 acres of field-grown conifers, deciduous trees and shrubs in enchanting Chester County.
- We serve the volume buyer as well as the "one-of-a-kind" seeker.
- Containerized dwarf conifers, foundation plants and young trees.
- Azaleas, rhododendrons, mums, perennials, roses.
- Gift certificates for all seasons.
- RETAIL AND WHOLESALE. EST. 1965.

Please call for an appointment and/or list of selections. We are open every day except Monday.

SHANAHANS' TREE FARMS and NURSERIES

R.D. #2, BOX 73B

HONEY BROOK, PA 19344

(215) 273-3318

LINDA CORSON LANDSCAPE DESIGN

- Consulting
- Plans
- Supervision

Member ASLA

Registered Landscape Architect

215-247-5619

David Brothers BEAN ROAD NURSERY

Landscape Architects, Builders
and Nurserymen

Providing the Fine Art of Garden Construction
and Landscape Restoration

QUALITY SERVICE WITH COURTESY
AND RELIABILITY

EDGAR and KIM DAVID

247-2992

584-1550

GREENHOUSE CONSTRUCTION Sales and Service

Janco, Lord & Burnham and more.

Call Robert J. LaRouche at

Glass Enclosures Unlimited

228 Poplar Avenue

Wayne, PA 19087

(215) 687-2444

GRACIE'S

NEW AGE EATERY & 21ST CENTURY CAFE

Healthy Food in a Nourishing Environment
"Live" Jazz Fridays

Diet Conscious Dining Series

—Wednesday evenings—


Make holiday party arrangements "NOW"

MANATAWNY ROAD, PINE FORGE, PA 19548

(215) 323-4004 Wednesday through Saturday

BRIAN J. TEMME TREE SERVICE

- Quality Tree Care
 - Pruning, Trimming, and Removals
 - Fertilization, Disease and Insect Control
 - Cabling and Stump Removal
- (215) 572-5665 or (215) 657-0555



Crataegus viridis 'Winter King'
A 1992 Pennsylvania Horticultural
Society Gold Medal Plant Award
winner. (For all winners see pages 3
through 10.) Photo taken at
Longwood Gardens by Larry Albee in
May.

GREEN SCENE

THE MAGAZINE OF THE PENNSYLVANIA HORTICULTURAL SOCIETY • MAR./APR. 1992 • \$2.00



Edible Flowers

Take Time Along the Way
to Taste the Flowers

See page 3



8



20



1992 Philadelphia FLOWER SHOW

Presented by

 **PROVIDENT NATIONAL BANK**
A **PNC** BANK

Produced by

The Pennsylvania Horticultural Society

MARCH 8-15

Philadelphia Civic Center

Monday through Saturday 10:00 AM to 9:30 PM

Sundays 10:00 AM to 6:00 PM

Tickets are available at the Civic Center
and Pennsylvania Horticultural Society,
325 Walnut Street, Philadelphia, PA 19106.

Front Cover: Abel and Agnes Drinkwater enjoy
a salad of edible flowers.

Front Cover: photo by Ruth Flounders

Back Cover: photo by Léonie Bell



in this issue

3. Edible Flowers

Ruth Flounders

8. Plant Swap in the Barn

Ellen Spector Platt

11. A Passion For Heirloom

Tomatoes

John P. Swan

16. Blue Flower Challenge

Léonie Bell

19. The Tortoiseshell Yam:

A Winner

Ray Rogers

20. *Diospyros kaki*, The Oriental Persimmon

John and Janet Gyer

24. Pin Your Slopes Down

Nicholas Schlufer

26. New Lobelia Hybrids

Patricia A. Taylor

29. A City Garden Changes

Libby Goldstein

32. Letters to the Editor

33. Classified Advertising

WE REGRET that Claire Sawyers, a member of The Pennsylvania Horticultural Society Gold Medal Plant Award Committee, was missing from our list of Evaluators in the January issue of *Green Scene* (p. 10). Claire, who is the director of Scott Arboretum, generously lends her personal support and the support of the Scott Arboretum to the Gold Medal Plant Award program. Scott Arboretum is a place to see many of the plants that are past and present Gold Medal Plant Award winners.

The Editor

Volume 20, Number 4

March/April 1992

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Monday through Friday 9:30am to 12 Noon (Hotline is closed in December)

Membership Information: Linda Davis, 625-8265

Donald L. Felley / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

Joseph P. Robinson / *Editorial Assistant*

Carol C. Lukens / *Editorial Assistant*

PUBLICATIONS COMMITTEE:

Anne S. Cunningham / *Chair*

Kathryn S. Andersen

Walter G. Chandoha

Judy Foley

Charles W. Heuser

Gene Jackson

Anthony A. Lyle

Robert McCracken Peck

Mary Lou Wolfe

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendells' Graphic

Printer: Howard Printing

The **GREEN SCENE**, (USPS 955580), Volume 20, No. 4, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$9.75—Single Copy: \$2.00. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE **GREEN SCENE**, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1992

Green Scene subscriptions are part of the membership benefits for:

Blithewold Gardens and Arboretum, Bristol, Rhode Island

Botanical Garden at Asheville, North Carolina

Cox Arboretum, Dayton, Ohio

Frelinghuysen Arboretum, Morristown, New Jersey

Hershey Gardens of Hershey, Pennsylvania

Maryland Horticultural Society, Baltimore, Maryland

Pennsylvania Horticultural Society, Philadelphia, Pennsylvania

Phipps Friends, Pittsburgh, Pennsylvania

The San Antonio Botanical Gardens, Texas

Staten Island Botanical Garden, Inc., New York

the green scene / march 1992

photo by Ruth Flounders



Elizabeth Flounders, the author's daughter, takes time to taste the flowers, a colorful addition to the '90s cuisine. (See p. 6 & 7 for salad suggestions. Never eat flowers from florists or unfamiliar gardens.)

EDIBLE FLOWERS

Take time along the way to taste the flowers



by Ruth Flounders

Edible Flowers

Trendy though eating flowers may seem, the ancient Greeks used borage in their wine to "make men merry"; Elizabethans cooked with roses and mallows; practical Puritans made calendula custard. The sensible Shakers made rose petal candy and blue flower omelets. Why, I remember jars of violet jelly from my own Aunt Edith, a woman seldom accused of being trendy.

Edible flowers offer the cook a new palette of color, form and flavor. If thyme and chives make tuna salad taste better, thyme and chive flowers do wonders for its looks. Stuff that salad into an early nasturtium flower some June day and it becomes special indeed.

From more pedestrian garnish, salads and herb flower butter, to pansies en gelée affixed to a wheel of brie, lavender sorbet, or "King Salmon in a Zucchini Blossom with Lemon Verbena and Begonia Sauce," (the latter from a well-known herb grower's restaurant), edible flowers seem entrenched at least on the fringes of '90s cuisine.

Since edible flowers are seldom available commercially, and **florists' flowers of any variety should never be eaten as they may be contaminated with pesticides**, gardeners are in a unique position to enjoy flower cookery.

Turning a long-time love into a business, I've been growing herbs and edible flowers for local restaurants and health food stores for the last two years. We harvest early in the morning and in the evening, reserving hotter times for the sturdier herbs. Each flower gets a good shake to dislodge any insects. Since we grow without any pesticides, even organic, and our beds are well mulched, our blooms seldom need washing. They stand up quite well to a rinse and a quick spin in the salad spinner if needed, though. Lightly misted, stored on a damp paper towel in a plastic container in the fridge, they keep for several days. Droopy flowers can be rejuvenated by floating in ice water.

staples of the trade

In the course of the growing year, we use most flowers verified as edible, but the real staples of our trade are pansies, calendulas and nasturtiums, in order of bloom. The season starts in early spring though, with violets that grow profusely in our woods and meadows. Both leaves and flowers of violets are edible and taste good. We send

them out for garnish, use them liberally in salads, candy the flowers or add them at the end of cooking stir fry. We'd love to make violet sorbet or jam or jelly if the busy season permitted. Their bloom lasts into May here, supplemented by their relations, johnny jump ups and pansies, and May-blooming lilacs.

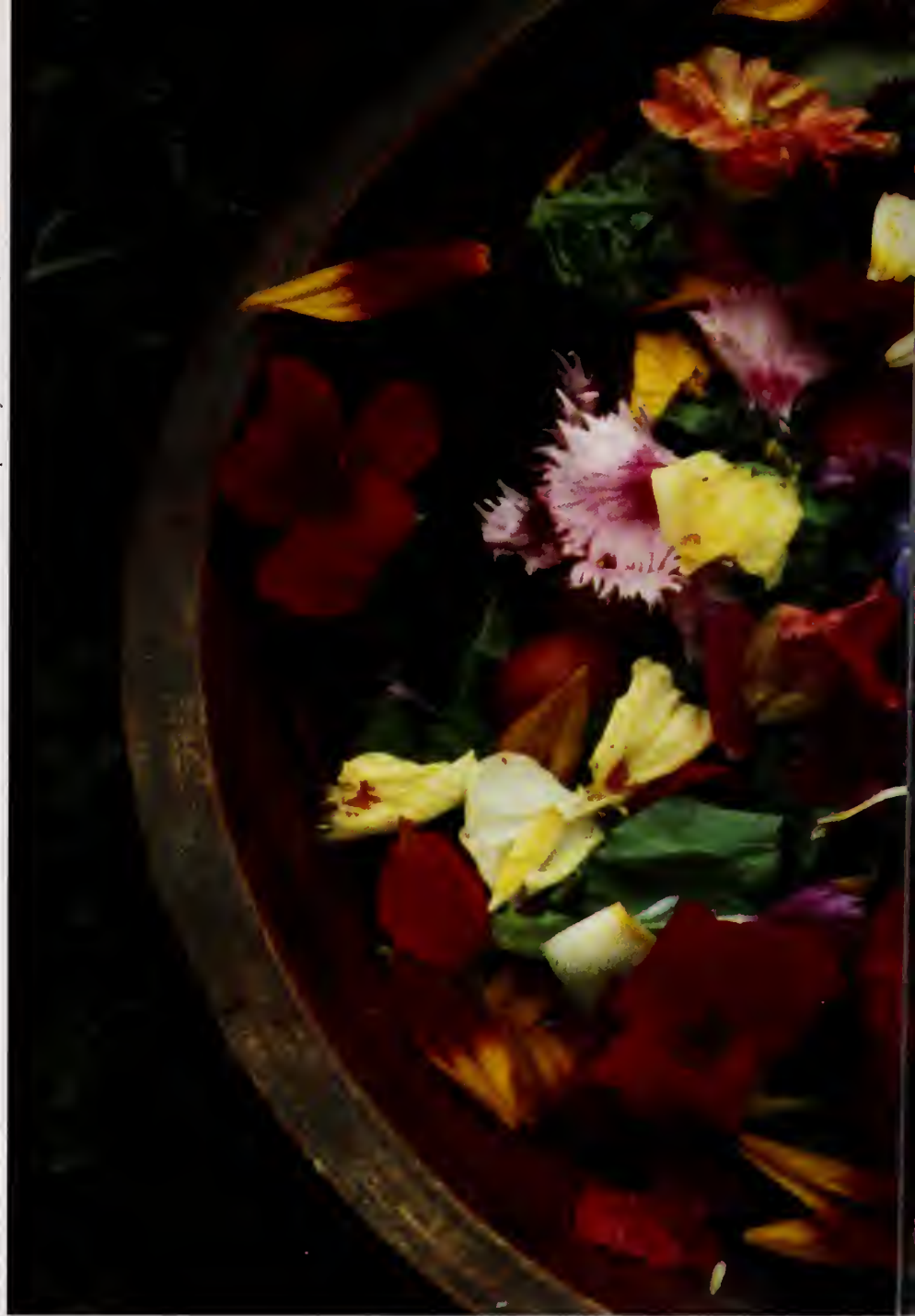
Pansies are planted out as soon as the ground can be worked in spring. This fall we're also experimenting with cold-hardy varieties in hoops, a cool greenhouse and in a sheltered spot near the house. Floral Dance, Mello 21, and Universal are three cold-tolerant varieties bred for fall and winter bloom. Grown from seed, they'll take at least three months to bloom.

If you buy plants from a grower, avoid those grown with systemic pesticides and pick off all buds and flowers if you're buying them for eating, even if the grower claims they weren't sprayed. Chances are their greenhouse neighbors were.

I can count on pansies to bloom most of the summer if plants are located in half-shade, mulched, kept dead-headed and watered. I do let some go to seed by late summer in anticipation of early spring volunteers.

Calendulas are started about four weeks before planting out in early spring and also seeded out early in rows. Either way, we can expect bloom in about six weeks from seed. If kept dead-headed, they'll slack off

photo by Ruth Flounders





Salad garnished with edible flowers includes: borage, calendula, dianthus, garlic chives, mint flowers, nasturtium, roses and sunflower.

a bit in summer heat, but come back with smaller flowers in autumn. I sow short rows into July to have plants coming into bloom all summer. I also count on volunteers from seed allowed to form in the fall.

For garnish, I prefer the smaller *Calendula officinalis*. 'Bon Bon' and 'Touch of Red' also perform well. The larger 'Kablouna' and 'Fiesta Gitana' provide petals for salads and cooking.

When older herbals refer to "pot marigolds" this is the flower they mean. The petals, used as a saffron substitute, lend a lovely color to soups, sauces and herb butters adding a subtle flavor without overwhelming other ingredients.

Nasturtiums are my favorite edible

flower. Their dependable spurred blossoms take us through first frosts if covered at night. I soak seed no longer than overnight and can count on flowers about six weeks after germination in late April — by early June. Though reputed to flower best in poor soil, I find they thrive in good garden soil amended with compost. They prefer full sun, but benefit from a little afternoon shade and will consent to grow in as little as four hours sunlight. I use them extensively to border beds and walkways.

There are dwarf, semi-trailing and climbing varieties, as well as 'Alaska' with cream and green mottled leaves. 'Empress of India' has dark green foliage and deep red flowers. Blossoms range from cream to

yellow, orange and red. The only pink cultivar is 'Cherry Rose.'

The biggest problem with nasturtiums is their attractiveness to the black bean aphid, which infests the undersides of the leaves and the flowers. We dislodge them with a spray from the hose and pull plants that seem severely infested. If you use insecticidal soap, wash blossoms well before eating. Nasturtiums are also susceptible to bacterial wilt, which affects vegetables in the *Solanaceae* family as well. Destroy any plants that wilt suddenly despite adequate water. Don't replant susceptible plants in the soil.

Nasturtiums taste something like watercress with undertones of sweetness. I think

continued

COOKING WITH FLOWERS

Experimenting with edible flowers and herbs, working out combinations to please the eye and taste buds is half the fun (I suppose the other half is growing them). The following recipes cover some standards with suggestions for improvisation.

Herb Flower Butter

1/2 cup fresh herbs: parsley combined with herbs of your choice
2 shallots, peeled or 2 cloves garlic
5 fresh nasturtium flowers, sliced in ribbons or 5 calendula flowers, petals only, cut in half or petals from your choice edible flower, to taste
1/2 lb. butter or margarine, at room temperature

Optional:

1 tsp. dijon mustard
1/2 tsp. grated lemon rind

In a food processor, combine shallot or garlic with herbs and optional ingredients. Blend in butter. Transfer to small bowl and work in flower petals with a wooden spoon. Let mellow at room temperature for one hour. Refrigerate.

Substitute cream cheese + 2 Tbsp. butter to make **Herbed Cream Cheese**.

Herb & Flower Vinegar

1 quart rice wine vinegar
large bunch lemon or other thyme
3 flowers, 2 leaves of nasturtium with long stems

Soak unopened bottle of vinegar in hot water to loosen label and warm contents. Removal label, open bottle, pour off 1/3 vinegar, reserving. Stuff thyme into bottom of bottle. With chopstick, weave stems of washed flowers and leaves into thyme to anchor. Top off bottle, cap and leave in a dark place for one month to mellow.

Experiment with other herbs and flowers, but be moderate in total amount used. Variations on this method twice were part of collections that won bronze medals for me in The Pennsylvania Horticultural Society Harvest Show.

the orange flowers are sweetest, but taste for yourself. We use leaves, buds and flowers for garnish, in salads, vinegars, herb butters and sauces. Stuff the blossoms with mild herb butters or herbed cream cheese. Blanche and stuff leaves as you would grape leaves. The green buds and unripe seed pods can be pickled for caper substitutes.

let the user beware

With renewed interest in flower cooking has come much confusing, contradictory information. Questionable and sometimes poisonous flowers, such as petunias, members of the *Solanaceae* family, have appeared on lists as edible. Lists of edible flowers without botanical names lead to confusion. Stories have circulated among growers of chefs serving calla lilies to unsuspecting diners. Don't eat flower you can't positively identify any more than you'd go to the wood and nibble mushrooms. If in doubt about a particular plant, check a good guide like *Sturtevant's Edible Plants of the World* (Edited by U.P. Hedrick, Dover Publications, New York, 1972).

In addition to the plants that appear on the following list, all vegetable flowers are edible except for tomatoes, eggplant, potato, pepper and asparagus. Peas (*Pisum sativum*) are edible. Sweet peas (*Lathyrus odoratus*) are **poisonous**. *Brassica* flowers, particularly kale and broccoli, are widely used.

All culinary herb flowers are edible and tend to taste like milder versions of their leaves. I've listed here some other culinary herb flowers that we use:

chervil — *Anthriscus cerefolium*
chicory — *Chichorium intybus*
clary sage — *Salvia sclarea*
coriander — *Coriandrum sativum*
dill — *Anethum graveolens*
fennel — *Foeniculum vulgare*
lemon balm — *Melissa officinalis*
lemon verbena — *Aloysia triphylla*
lovage — *Levisticum officinale*
marjoram — *Origanum marjorana*
mint — *Mentha* spp.
oregano — *Origanum vulgare*
O. heracleoticum
safflower — *Carthamus tinctorius*
savory — *Satureja hortensis*
S. montana
sweet cicely — *Myrrhis odorata*
sweet woodruff — *Galium odoratum*
thyme — *Thymus* spp.

Addicted to growing herbs while a community gardener with Philadelphia Green, Ruth Flounders traded her garden plot for 13 country acres and Sculps Hill Herbs. She is a frequent contributor to *Green Scene*.

Edible Flowers

Anchusa capensis

Anise hyssop (*Agastache foeniculum*,

Apple blossoms (*Malus* spp.)

Basil (*Ocimum basilicum* and other s

Bean flowers (*Phaseolus* spp.)

Bee balm (*Monarda didyma* and oth species)

Borage (*Borago officinalis*)

Calendula spp.

Chives (*Allium schoenoprasum*, *A. tuberosum*)

Chrysanthemum (*C. x morifolium*, *C. leucanthemum*)

Clover, Red, (*Trifolium pratense*)

Daylily (*Heemerocallis* spp.)

Dandelion (*Taraxacum officinale*)

Dianthus spp.

Elderberry (*Sambucus caerulea*)

English daisy (*Bellis perennis*)

Fuchsia

Gladiolus spp.

Geranium (*Pelargonium* spp.)

Hollyhock (*Alcea rosea*, *A. zebrina*,

Honeysuckle (*Lonicera japonica*, *L. fragrantissima*)

Hyssop (*Hyssopus officinalis*, *H. off. 'Rosea'*)

Lavender (*Lavandula* spp.)

Lilac (*Syringa vulgaris*)

Marigold (*Tagetes lucida*, *T. tenuifolia*, *T. spp.*)

Nasturtium (*Tropaeolum* spp.)

Pansy (*Viola x Wittrockiana*, *V. tricolor*, *V. cornuta*)

Poppy (*Papaver rhoeas* **only**)

Rose (*Rosa* spp.)

Rosemary (*Rosmarinus* spp.)

Squash (*Cucurbita* spp.)

Sunflower (*Helianthus annuus*)

Tulip (*Tulipa* spp.)

Tuberous begonia (*Begonia* spp.)

Violet (*Viola odorata*, *Viola* spp.)

Watercress (*Nasturtium officinale*,



Taste	Best Use	Comments
Mild	Salads, garnish	Small but prolific annual flower. Pink, blue, white.
Anise/licorice	Cookies, breads where anise taste is desired	Pull each flower from calyx or strip from stem.
Delicate, flowery	Garnish	Edible also: prune or plum, <i>Prunus domestica</i> & cherry, <i>P. avium</i> and sour cherry <i>P. cerasus</i> .
) Like leaves of variety	Salads, pasta, seafood, sauces	Anise, cinnamon, lemon & Thai among other cultivars. See comments, Anise hyssop.
Like mild beans	Garnish potato & other salads	Painted Lady, Hyacinth, Scarlet Runner, all nice.
Strong, minty	Tea, fruit salad	Red, pink, purple, white.
Mild cucumber	Salad, fritters, pasta, beverages	Pull bright blue bloom from calyx. Easy, self-sows.
Mild, floral	Custard, soup garnish	Orange, yellow, pale cream. See text.
Onion, garlic	Vinegar, omelets	Use when flower buds open. Flat leaves of garlic chives elegant garnish.
Varies, some bitter	Garnish, float in soup	Said to cause allergic reaction in some people. Use caution.
Sweet, grassy	Salads	Common, lovely.
Varies from sweet to metallic	Buds in honey. Soup, sauce.	Wild orange preferred. Some hybrids may cause diarrhea. Use moderately.
Much milder than greens —good	Wine, jelly, soup, salad	Petals only. Rich in vitamins.
Spicy, clove-like, yet delicate	Garnish esp. for fruit. Gillyflower wine	Annual and perennial types. Staple of floral cuisine.
Musky—sweet	Traditional for fritters	Know your source. Can be confused with poisonous water hemlock
Mild, good	Garnish, petals in salad	Likes moisture.
Strong	Garnish	Elegant on plate.
Varies	Garnish, stuffed	Some very strong. <i>G. x gandavensis</i> not edible
Floral to mint to citrus. Pleasing	Jelly, tea, cake, muffins	Many wonderful varieties. Widely used. Leaves are also a nicely scented garnish.
Mild, Vegetable	Stuffed, syrup, fritters	Try dwarf varieties
Sweet	Tea, fruit dishes	The edible flower of childhood.
Strong anise	Tea, cookies, salad	Both blue and pink flowered bloom all summer here. A regular in our packaged salad mix.
Perfumed, floral	Baked goods, jelly, salad	Surprisingly good.
Sweet, floral	Desserts, garnish, salads, sorbet	Absolutely delicious!
Tarragon Strong, musky but good Strong marigold	Tarragon substitute Fresh or dried tea, garnish Limited	Mexican tarragon, takes long season to bloom 'Lemon Gem,' 'Golden Gem,' 'Tangerine Gem' Most marigolds edible, many don't taste good
Peppery sweet	Stuffed, salads, garnish, sauces	Use both leaves and flowers. See text.
Light, floral to grassy, good	Garnish for sweets, salads, entrees — good	Dependable, delicious. See text.
Lovely	Makes a traditional syrup	Pretty red flowers. Most poppies poisonous.
Sweet, floral to musky	Jam, vinegar, rosewater, garnish	A staple of flower cooking/try the named rugosa cultivars.
Like the herb, but milder	Lovely, garnish & as you'd use herb	<i>R. off.</i> 'Prostratus' prolific flowering
Mild	Stuffed, batter-fried, sliced thin for salad	Choose male blossoms.
Mild	Petals for garnish	Small multi-bloomed preferred. Carefully remove center, fill cavity with dip.
Varies	Remove stamens & pistils — stuff	Tulip bulb poisonous.
Varies, but tends toward sour-citrus	Garnish, sauces	Rich, moist soil. Some shade.
Sweet, floral to perfumed	Candied, in salad, garnish, jam	One of the first edibles of spring. Use leaves and flowers.
Peppery	Garnish, salads, soup	Small white flowers from early summer to fall. Strong tasting.

Plant Swap in the

When your perennials' divisions are as unwanted as extra kittens, it's time for desperate measures. When your friends refuse to take one more heliopsis or iris, something must be done.

To celebrate Earth Day 1991, I hosted a Plant Swap at my flower and herb farm in April to solve this perennial problem for me and for others.

The rules were few:

- Bring five divisions of a beautiful perennial that you have in surplus (over-running your garden).
- Go home with five divisions from other gardeners (wonderful plants someone else couldn't wait to get rid of).
- Bring a luncheon dish you prepared to serve eight, **featuring at least one locally grown ingredient, in season**; no foil or plastic wrap for your covered dish.
- Bring your own non-disposable plate, mug, napkin and utensils.
- Be prepared to brag and moan with other gardeners. Families are welcome; if yours is large bring more food.

The invitation met with great enthusiasm but some skepticism about the ability to produce local ingredients in mid-April. In

Schuylkill County, Pennsylvania, it's a month too early for asparagus or rhubarb and about three weeks until our last frost. As sole arbiter of the rules, I relaxed them on request.

The "in season" stipulation caused a problem for several people who had frozen or preserved a bountiful harvest from last summer but had nothing fresh as yet. Would I accept frozen peaches and zucchini, jarred apples, dried tomatoes? I would! Could "locally grown" ingredients include chickens and eggs from local farmers? Of course! One woman who has a small oriental garden with shrubs but few perennials asked to bring houseplants to swap. A woman who no longer actively gardens asked to be included in the covered dish portion of the party, but wanted to opt out of the plant swap. She was welcomed for her gardening lore as well as her salad. As long as guests entered into the spirit of the day, they had wide latitude to interpret



illustration by Karel Hayes

Barn



by Ellen Spector Platt

the rules.

Many gardeners are already enthusiastic recyclers or if less than enthusiastic, follow the garbage requirements in their communities. Compost heaps of various degrees of sophistication are becoming commonplace. But most of us haven't begun to scratch the surface of our own wastefulness. We continue, for example, to use masses of disposable products when reusables would work as well. Even on our local river clean-up day, which attracts several hundred people, I found myself on the refreshment crew serving hot coffee and cocoa in Styrofoam cups. We refueled volunteers to collect the Styrofoam people had dumped. Next year the organizing committee plans to ask volunteers to bring their own mug or collapsible cup for refreshments.

Guests at the plant swap had varying reactions to bringing their own eating gear. Some thought it a clever stunt and were

In the fall shoppers will buy supermarket apples from Washington State, rather than local tangy, sweet-smelling varieties that are unwaxed. A supermarket within a mile of a strawberry farm sells California-grown berries in June when the local berries have a perfume and flavor unmatched by berries grown for sturdiness and picked green.

amused. Most were grateful for the opportunity and the reminder to cut down on waste. Three people "forgot" to bring their things, and I rescued them with dishes from my cupboard.

At the swap I was trying to sensitize people not only to waste but to the savings in energy and cost associated with food raised nearby. We all know that food prices continue to rise; government statistics indi-

cate that over the past 10 years the farm-retail spread has risen, and the farmers' share has declined. Over 4/5 of increased food costs results from an increase in marketing costs. In 1986 the farm value of food produced in this country was only 30% of the retail cost. The other 70% went to processing, transportation, wholesaling and retailing.* In 1990 \$17.8 billion was spent on rail and truck transportation, excluding local hauling.**

We are fortunate in Schuylkill County to have a few remaining farmers who sell their produce at nearby markets or at their own farm stands. But even in the fall shoppers will buy supermarket apples from Washington State, rather than local tangy, sweet-smelling varieties that are unwaxed.

* 1989 Fact Book of Agriculture. U.S. Dept. of Agric. Misc. Publication #1063.

** Statistical Abstract of the U.S. 1990. U.S. Dept. of Commerce, Bureau of Census.

continued



KAREL HAYES 1992



Participants at the Plant Swap each brought one dish, prepared from locally grown ingredients, in season, to share at lunch.

A supermarket within a mile of a strawberry farm sells California-grown berries in June when the local berries have a perfume and flavor unmatched by berries grown for sturdiness and picked green. We are spoiled into forgetting that for each thing there is a season, and if we switch from strawberries to blueberries to blackberries, to late raspberries, to apples and pears we will enjoy them even more for anticipating the season. A winter without fresh fruit is indeed a fearsome thing to contemplate.

As guests arrived at the farm they laid out their food on the picnic table drawing others to the inviting, aromatic display. All was well prepared and artistically presented, some labeled, some not, some with recipes, some not. Although the invitation stipulated no foil or plastic wrap, some people felt that re-used plastic bags were acceptable for transportation. I didn't send them home. Early violets and pansies decorated a spring greens salad. An enterprising woman brought her baked chicken and apple casserole (local chickens, local storage apples) swathed in linen dish towels to keep hot on her 50-minute drive to my farm. A beautiful salad with foraged ingredients was tossed in a stoneware salad bowl, hand thrown by the guest. People seemed to enjoy using ingenuity in their recipes and had obviously spent time deciding which local produce to use. A creative woman baked custardy lemon squares for dessert using local eggs and lemons from

her indoor lemon tree.

The menu included: Sorrel Soup; Herb dip in wheat bread bowl; Watercress, wild leek and mustard cress salad; Rice and apple salad; Broccoli salad; Spring greens and herb salad; Spinach pie; Curried turkey; Zucchini and ham casserole; Baked chicken and apples; Enchiladas; Chicken salad with tarragon and watercress yogurt dressing;

Next year, my instructions will probably include an emphasis on the unusual, and may even stipulate, "No groundcovers except rarities."

Bread and herb butter; Cheesy herb wedges; Rose geranium cake; Citrus squares; Apple pie; Peach muffins.

Prize-winning Watercress Salad
presented by Penny Rickenbach

Common winter cress florets
(*Barbarea vulgaris*)

Watercress (*Nasturtium officinale*)

Wild leek (*Allium triocum*)

Blue violet, sp.

Garden variety Johnny jump up

Roasted walnuts

Olive oil

Lemon thyme vinegar

The invitations for the plant swap said rain or shine, since I have a large barn that could house all of the activities if necessary. My fantasy was of a picnic in the meadow under blue skies and a sunny 80°F. The reality was a drizzle, and a cold, dank 40°F. Prepared swappers appeared in down parkas with hoods. Unprepared swappers shivered through lunch until we trooped into the house to warm up with dessert, tea, and more good garden talk.

Warmed and refreshed we proceeded back to the barn to select the plants to take home. Guests drew numbers for their selection order. All gathered round as #1 chose her first three plants, and #2 eyed his favorites. After the last person had chosen three, she started the second round selections with her final two choices, so the last was first and the first, last. This scheme prevented grabbing for the best and the rarest, and like the NFL draft, demanded a constant reevaluation of the choices as favorites were selected: a lot of ooing and ahing and hoping as favorites were selected or passed over. I noticed no swapping for a later round draft pick.

The plant swap attracted gardeners of all levels of experience and interest. Some came with their plants well labeled with botanical and common names, others came hoping that someone could identify their plant. One plant known as "Aunt Millie's double buttercup" turned out to be an old ranunculus from an inherited garden.

In my invitation I might have overdone the emphasis on "Plants you can't wait to get ride of"; I noticed a plethora of groundcover, many mints including a Korean mint, spearmint, peppermint, and lemon balm, ajuga, pachysandra, and lamb's ear. To compensate there were lilies of the valley, campanulas, a peony, forget-me-nots, chrysanthemums, various herbs and the first plant selected, a three-foot-tall rose geranium standard in full bloom produced by the woman who had only indoor plants to give away. Next year, my instructions will probably include an emphasis on the unusual, and may even stipulate, "No groundcovers except rarities."


For further information and reservations to the 1992 Perennial Plant Swap to be held on Saturday, April 25 at The Meadow Lark Flower & Herb Farm call 717-366-1618.

Ellen Spector Platt received her M.A. in Psychology from Bryn Mawr College. She taught, researched and practiced psychology until 1990. She started Meadow Lark Flower & Herb Farm in 1985 as a part-time business. Now a former psychologist, Platt is a full-time flower farmer. Rodale Press will publish her book *Flower Crafts From a Country Garden* in January 1993.

A PASSION FOR HEIRLOOM TOMATOES

Funny Names & Fantastic Flavors

 by John P. Swan



A part of the cornucopia of 45 unusual varieties of heirloom tomatoes entered by Dorothy Noble in the "Bounty by the Basket" class at the 1991 Pennsylvania Horticultural Society's Harvest Show. The entry was awarded a blue ribbon.

photo by John P. Swan

Heirloom Tomatoes

Come on over for dinner tonight. We're serving Radiator Charlie's Mortgage Lifter Tomatoes, Lazy Wife's Pole Beans, and Howling Mob Corn with Ragged Jack Kale. All topped off with Moon and Stars Watermelon for dessert. And when you leave, I want to give you some Tiger Tom and White Snowball tomato seeds from my veggie garden.

A fanciful scenario? Step back in time, only a few generations ago, and you would find that heirloom vegetables like these were the prized varieties in American gardens.

You can be sure these names were not conjured up by a marketing committee or created by computer. No. Most sprang from authentic grass roots origins. Farmers and gardeners gained a local reputation for developing a superior strain. Families passed along seeds from generation to generation. Names were picked up along the way, sometimes that of the gardener, descriptive of some appearance characteristic, or commemorated their "old country" origins. They caught on.

what is in a name?

One of these homespun names, though amusing today, must have raised Victorian eyebrows. In 1888, Burpee's 130-page catalog devoted half a page of text and a tantalizing engraved illustration to Lazy Wife's Pole Bean, but felt compelled to apologize for the name, "which seems to us rather discourteous." In that same catalog one could buy a packet of Faultless Early Tomato seeds for 5¢ postpaid if you had the nerve to disregard the startling warning, "It is very early, but far from faultless."

One hundred and three years later, the 1991 Southern Exposure Seed Exchange catalog, which carries hundreds of old-time heirloom vegetable varieties, tells the fascinating story about one of its listings — a legendary tomato developed in the 1930s by a radiator repairman in the hills of West Virginia. He had no formal education or plant breeding experience, yet after years of backyard cross breeding and selection he developed a long bearing, disease-resistant, stable strain with scrumptious tomatoey taste. Gardeners drove up to 200 miles each spring to snap up his plants at the unheard of price of one dollar. Six years later he was able to pay off his mortgage! The name, Radiator Charlie's Mortgage Lifter, stuck.

You'd be hard pressed to find this tasty tomato, or other heirloom vegetables for that matter, in the mass merchandising catalogs of today. And never in the supermarket. For these gustatory gems you have to turn to private non-profit seed preservation organizations or to small individually owned specialty seed houses. These are dedicated people, concerned about the very

Back in the 1930s gardeners drove up to 200 miles each spring to snap up his plants at the unheard of price of one dollar. Six years later he was able to pay off his mortgage! The name, Radiator Charlie's Mortgage Lifter, stuck.

Where Is the Taste in a Tomato?

It's about 95% water, but what a difference the other 5% makes. The tangy taste of a toothsome tomato is found in the gel or watery pockets where the seeds are located. This area is higher in flavorful acids and lower in sugar than the fruit wall surrounding it. This explains why meaty tomatoes tend to have less flavor intensity than juicy tomatoes. It also makes clear why low-juice, thick-walled hybrids genetically altered to ship and store well taste like cardboard. Most hybrids are not bred for their fresh eating qualities.

So, as a general rule, choose tomato varieties with thin walls, and large, juicy seed cavities. Of the many rewards of vegetable gardening, nothing beats the mouth-watering "fresh tomato" taste of fruit fresh from the garden.

real danger of extinction of these unique family heirlooms. They are driven not so much by profit as by preservation. Their goal is to broaden the availability of generations-old, regional strains that many consider to be the tastiest tomatoes around.

looking backward for the best?

You might ask, why should we consider turning to the past for tomato taste when each new hybrid appears to be bigger, better, more disease tolerant, prettier, than its predecessor? Same idea as a new model year automobile. Isn't that kind of progress exactly what the post World War II agricultural "Green Revolution" and modern hybridization are all about?

In turn, I might ask, in a seemingly unrelated question, when was the last time you saved seeds from your best-tasting or longest-bearing tomato plants for use the next season? If you are like me, the answer

is never. Hooked on hybrids, many being unstable, I can't make the next generation of tomatoes come true even if they germinated. I have to return to the seed catalogs for these proprietary brands.

It wasn't always that way.

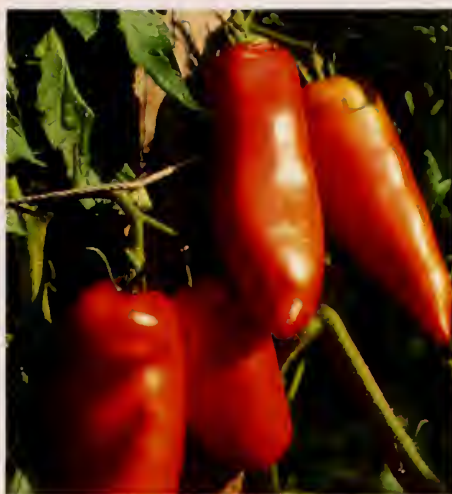
the history locked up in a seed

Our heirloom story stretches back to the dimly lit, remote past before the appearance of mankind. It was a time when the genetic make up of all plants was tested continually against the hostile forces of nature. The species that could modify and adapt to their environment survived this unforgiving natural selection process.

When primitive man arrived on the scene, a new set of standards was imposed on useful plants. They were subject to a selection process designed to serve human survival needs. This meant that seeds of the largest, toughest, early- or late-bearing or highest-yielding plants were saved to the exclusion of the "weaker" plants. Over time, domesticated varieties were refined by a weeding out process that reflected regional preferences. It was through selection like this that Chinese farmers in antiquity speeded up the maturing of rice and the Incas developed a fat tomato. Seeds of beans, rice, corn, and other food crops were the link of life between each generation. Young marrieds were given precious seeds to start their own independent lives.

The development of varieties did not progress down a narrow path however. The "best" bean was never just one variety. There were probably countless variations wherein one region would have preferred a purple-striped bean, say, while another liked a yellow variety. Most important, the great diversity of these regionally adapted varieties represented a broad and strong genetic base. Genetic diversity is, after all, nature's best insurance policy against the acts of nature itself. We humans are the beneficiaries.

Time-honored seed saving, so essential to survival, was a necessity in early America too, and continued from generation to generation up through most of the 19th century. Each wave of immigrants from all corners of the earth brought their cherished, time-tested vegetable seeds with them, often concealed in their clothing. America became a genetic treasure house, host to a rich and diverse accumulation of varieties, the heirlooms of today.



Unusual shapes and colors, plus bountiful yield, make heirlooms fun to grow. Shown are: Brandywine, Opalka, Yellow Potato Leaf [sic].

By the end of the 19th century, however, change was in the wind. Seed companies were providing an alternative to traditional seed saving, offering convenience and wider choice. By 1868, Hovey & Co., in the first illustrated seed catalog, offered 27 tomato varieties and Burpee's 1888 catalog listed 18 choices. Probably all would qualify as our heirlooms of today. But the stage was set for the decline of the species.

hybrids gain dominance

The 20th century has witnessed, particularly the last half, an explosion in the purposeful manipulation of tomatoes and other vegetables, modifying them to suit the economic needs of broad scale commercial agriculture. Home gardeners, effectively dependent on seed houses' proprietary hybrids (many developed for agribusiness), may be unaware that their choices are pretty much limited to hybrids. Taste, as our forebearers must have known it, has become secondary to other hybridization goals.

The "Green Revolution" has fed the world. The benefits of high yield and mechanized agriculture are indisputable. But a disconcerting effect has been to reverse 10,000 years of teeming genetic diversity by narrowing, not preserving, the genetic base.

the utilitarian tomato

The tender, luscious "love apple," or as its botanical name translates, "wolf peach," has been largely genetically redesigned for single-minded, economic objectives. Today, the tomato is part of the work force with a job description reflecting the needs of mechanization and distribution.

Mechanical harvesting bruises naturally soft tomatoes. So, breed a hard, thick-skinned version. Cut packaging costs. How about a square tomato that fits your con-

tainer? As a commercial grower, I can only afford to make one harvesting pass. Enter the vigorous bush varieties that ripen all at once and collapse. A supermarket wants a perfect-looking tomato in the winter. We've got it. An artificially ripened, ethylene gas-enhanced crimson cannonball.

Modern breeding miracles. Yes. But, where has all the flavor gone?

A disconcerting aftereffect of the "Green Revolution" has been to reverse 10,000 years of teeming genetic diversity by narrowing, not preserving, the genetic base.

Craig LeHoullier, a knowledgeable West Chester (Pa.) tomato gardener says he knows where the flavor is. So does Dr. Jim Ault, plant propagator-physiologist at Longwood Gardens. Both vegetable gardeners believe that the best-tasting, highest-yielding tomatoes are to be found among the old-time heirloom varieties.

the heirloom tomato, a slice of history

Heirlooms can best be described as those varieties that date from around 65 to 100 years or more ago, although a few family favorites can be traced to pre-World War II times. The oldest of the heirlooms survived in rural or ethnic communities because seeds of the best tomatoes were passed down from generation to generation and became genetically adapted to the local climate, soil, and diseases. "People don't keep seeds for 150 years if they aren't tasty," says Kent Whealy, Director of the Seeds Savers Exchange in Decorah, Iowa.

discovering tomato flavor

LeHoullier's passion for tomatoes, com-

bined with his scientific background, has led to a remarkable gardening adventure. In his two vegetable gardens, he has been conducting tomato trials for five years. Over that period he has kept careful records of flavor, yield, and appearance of 149 heirloom tomatoes and some 25 contemporary hybrids. Although he gives some hybrids high marks, LeHoullier reserves his highest praise for the best of the heirlooms, "They out perform the hybrids and have a richer, more balanced tomatoey flavor . . . It's like wine tasting," his eyes lighting up as we munched luscious red, yellow, white, purple and green (ripe, too!) slices of his pet tomatoes.

LeHoullier's interest in exploring heirlooms came about, "because the hybrid product failed to perform for me as claimed in copy and photos. They were pushing hybrids, and I wasn't happy with the bland sameness of the commercial varieties." His dissatisfaction and his search for rich tomato taste eventually led him to Seed Savers Exchange in Iowa, a grass-roots, non-profit organization dedicated to saving valuable heirloom vegetables from extinction through seed sharing. Jim Ault, also a member of this movement, who grows his top tasting tomatoes, "first and foremost for my stomach" fervently feels that, "Preservation of as wide a genetic base as possible is the whole idea. Growing and sharing is the means."

heirloom fever

LeHoullier, rallying to this cause, also scoured some 150 catalogs for other sources and choosing from 2,500 named tomatoes started testing varieties for their adaptability to the Delaware Valley environment. Vegetable gardening was not to be the same again. Lifted out of the ordinary, he discovered a new world of heirloom excitement: a rainbow of fresh

continued



A striking rainbow of mouth-watering heirloom tomatoes grown by Craig LeHoullier of West Chester, Pa. Tossed together in a salad, they add appetizing color and range of taste.

LeHoullier squeezes the seeds out of his best heirlooms to save them over the winter.



Craig LeHoullier's Favorites

For rich, balanced flavor:

Brandywine (pink)
Cherokee Purple
Anna Russian
Red Brandywine*
Eleanor*

For the sweet tooth:

Mortgage Lifter
Hugh's
Pineapple

On the tart side:

Yellow Potatoe [sic] Leaf

*Jim Ault's favorites

new colors from white to orange to violet; a range of tastes for every palate; sizes spanning the pea-size Mexican Midget to the hefty two pounder, Mortgage Lifter.

No uniformity here. Nature did not create heirlooms to look like photographer's models. But, oh what character! Those who attended last fall's Pennsylvania Horticultural Society Harvest Show were treated to a cornucopia of almost 100 heirloom

A supermarket wants a perfect-looking tomato in the winter. We've got it. An artificially ripened, ethylene gas-enhanced crimson cannonball.

tomato "individuals," each with its own unique flavor characteristics, color, and shape. No two were alike. "There is life after the red tomato," chuckles LeHoullier who was awarded the "Certificate of Merit" for this "Outstanding Major Educational Exhibit" at the Show.

rugged heirlooms are easy to grow

"Growing heirloom tomatoes is no different from growing the catalog hybrids," says LeHoullier, who refers to himself as a "gimmick-free gardener." A firm believer that these time-tested tomatoes have learned to fend for themselves, he does not fuss over them, water unduly during dry periods, or spray pesticides.

He plants the seed he has saved from the previous year in mid-March using commercial soilless seed-starting mixture. They're kept in a warm place in his basement under fluorescent lights. When the seedlings grow four leaves he transplants each one into a three-inch pot, burying its stem. At about one foot in height they are repotted again burying as much of the stem as possible for maximum root growth. When planting outside in late spring, he prepares the ground by mixing in a shovel-ful of mushroom soil, 10-10-10 fertilizer, and a small amount of crushed limestone, to help prevent blossom end rot. As the plants grow, they are pruned to two or three main stems and tied to seven-foot stakes. Even then some of his heirloom varieties are so vigorous and productive that additional support is needed.

LeHoullier claims that his best heirlooms are no more or less susceptible to disease than the hybrids he has grown. He has encountered some blight (the yellowing of lower leaves), but it has not affected quality or yield. He admits that a few heirloom tomatoes may not meet the modern hybrid criteria of unblemished cosmetic perfection — a notion that has been instilled in

COMMERCIAL SOURCES

Exclusively heirloom vegetables:

Southern Exposure Seed Exchange
P.O. Box 158
North Garden, VA 22959
72-page informative catalog
(\$3.00) features heirlooms adapted
to our Mid-Atlantic region

Gleckler's Seedmen
Metamora, OH 43540

Mostly heirloom vegetables:

Seeds Blum
Idaho City Stage
Boise, ID 83706
100-page catalog (\$3.00) makes
fascinating reading as well

Hybrid and heirloom varieties:

Johnny's Selected Seeds
Foss Hill Road
Albion, ME 04910

The Tomato Seed Co.
P.O. Box 323
Metuchen, NJ 08840
Features some 320 varieties

High Altitude Gardens
P.O. Box 4619
Ketchum, ID 83340
Unusual Siberian and other cold-
tolerant tomatoes

Tomato Growers Supply Co.
P.O. Box 2237
Fort Myers, FL 33902
Features about 170 varieties

Nichols Garden Nursery
1190 North Pacific Highway
Albany, OR 97321

Seed Exchange:

Seed Savers Exchange
203 Rural Avenue
Decorah, IA 52101
Dedicated to locating, exchanging,
and preserving edible plants — not
a seed company. Membership, \$25.

BOOKS

The following books are available
in the PHS Library:

The Heirloom Gardener
by Carolyn Jabs
Sierra Club Books,
San Francisco, 1984

Seed to Seed
Seed saving techniques for the
vegetable gardener
by Susanne Ashworth
Seed Savers Exchange, Inc.,
Decorah, IA, 1991

An Heirloom Hunter's Guide to Shopping the Catalogs

Webster's defines an heirloom as, "something of special value handed down from one generation to another." Not being a scientific horticultural term, nor a specific type of tomato, one has to generalize when describing the wonderful world of vigorous vegetables known today as heirlooms. A practical rule of thumb covering catalog encounters is:

- Look for terms such as "old-fashioned," "standard" as well as "heirloom."
- Some catalogs list them as "O.P.," which stands for open pollinated.
- Most heirloom tomatoes are indeterminate — climbers that continue to form blossoms. Determinate plants are bush varieties, seldom heirlooms.
- The terms F, or hybrid, refer to manipulated forms and are not heirlooms.

people's minds, not just about tomatoes, but about apples and oranges too. But, winning stereotyped supermarket beauty contests is not what heirlooms are all about.

beyond taste

LeHoullier believes that today's gardeners must be the most fortunate in history. The catalogs and display racks are chockful of appealing vegetable seeds just for the buying. Is it possible, though, that we are realizing only a part of the pleasure of vegetable gardening by limiting our experimentation to hybrids in the hope of finding the "just right" tomato? Hybrids have a place, but introducing heirlooms into the mix can bring a deeper dimension to the whole idea of vegetable gardening. It goes beyond the fun of trying out different varieties for flavor, long yield, or even novelty. With heirlooms, it is the simple, but significant act of *saving* the best seeds for next year's crop. That's involvement of a different kind. Do that and you join in a life-sustaining tradition as old as mankind.

Photographer-writer John Swan gardens with his wife Ann in West Chester. He is a frequent contributor to *Green Scene*. Swan is a member of the Pennsylvania Horticultural Society's Flower Show Executive Committee and vice-chair of Horticulture in the Show's Horticult. He is a former PHS Council member and a current Board member of Historic Bartram's Garden.

Blue Flower Challenge

HOW TO GET A TRUE BLUE PHOTO

by Léonie Bell

It seems ironic that many flowers in my favorite color blue should have no scent. Although they draw bees, delphiniums in all their blue glory attract only by color. The smaller but easier-to-grow larkspurs match them in everything but true cerulean. Hydrangeas are hardly so popular in this country as they are in Europe, but in the heat of July I crave their cool heads of turquoise bracts, a challenge in our sweet-soil garden. Then consider the forget-me-not tribe, packed with blues, beloved of bees but to human noses, zilch. A zero. Cornflowers, nigella, bellflowers, asters — all, indispensable for cutting but hardly worth a sniff. The sages, in a class by themselves, have foliage endlessly varied in herbal pungencies, but with flowers just as various, very low on the scent scale.

So why have so many plants in my garden, which is purportedly dedicated to fragrance, been without perfume? Well, it hasn't. In spring there have been sweet violets (true *Viola odorata* forms, not the variations of native *V. cucullata* like 'White Czar,' foisted on a trusting public), hyacinths, lilacs, wisteria, iris. There has also been a surfeit of pink, pink in all its tints and shades, and even if this is provided by wondrously fragrant old roses and *Dianthus*, to the eye, so much of a good thing is not pleasing. The contrast of blue, blue-violet and purple did good things for the roses, made them lovelier, more worth looking at individually, inhaling with each glance, almost like little kisses.

There was a challenge as well to concentrating on blue flowers. Garden writers have long claimed there weren't many of them, especially at midsummer. Possibly true once, this is changing with the advent of plants like *Salvia* 'Victoria' and *S.* 'May Night,' and taller annual forms of *ageratum*. A few do require extra culture of one kind or another, or special situations. Still, I have a strong impression that American gardeners are either timorous of blues or actually do not find them necessary to the overheated color schemes of summer. Adventurous florists on the West Coast, in New York and Philadelphia are trying to change our tastes with their palette of full-blown roses, Queen Anne's lace, lime-green heads of *Hydrangea arborescens*, lots of lavenders and off-beat blues, but home gardeners still go in too much for red and yellow.



Morning-glory 'Heavenly Blue' in shade.

blue calls to the photographer

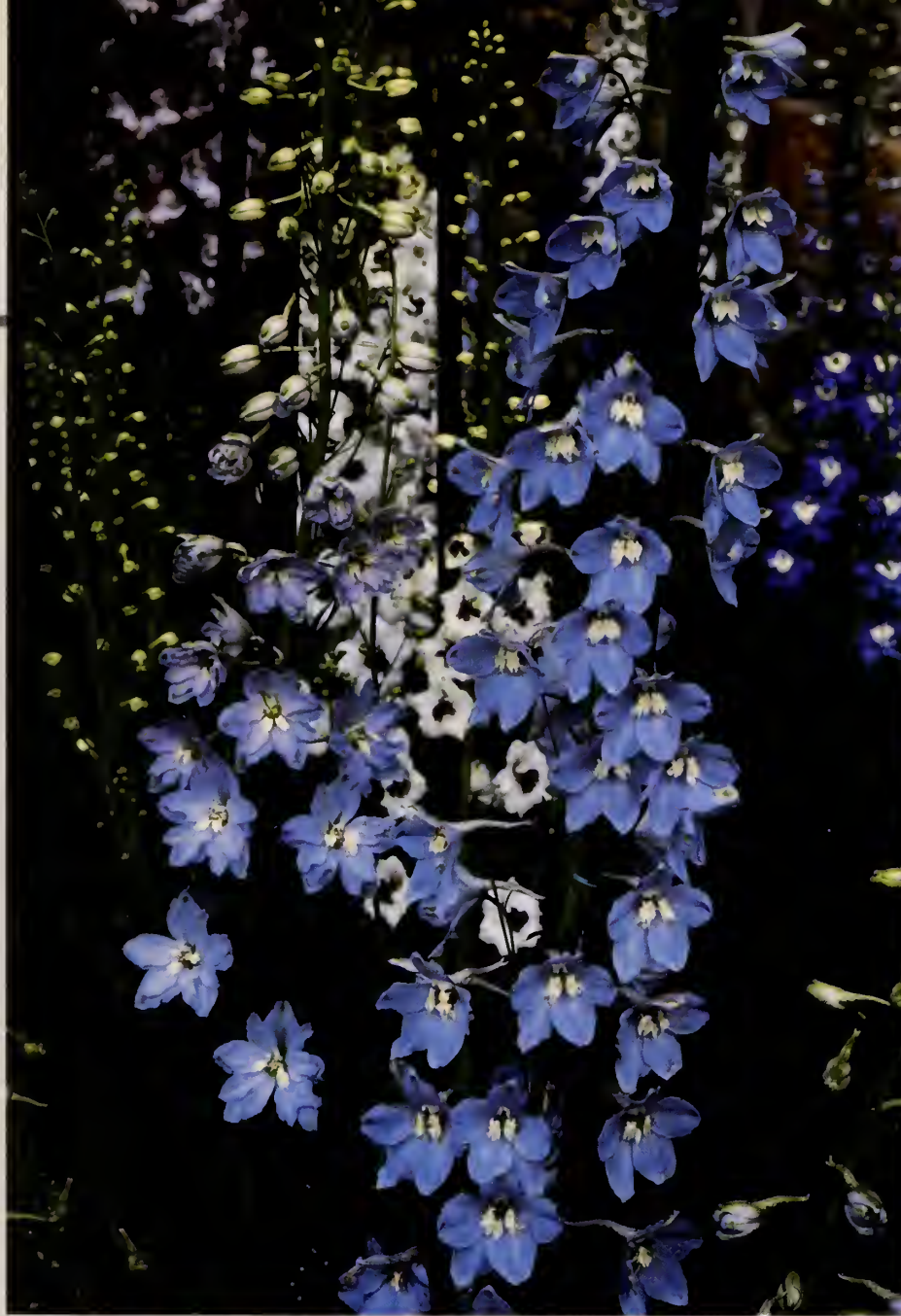
A good stand of blue flowers in a garden, or some not-to-be-forgotten combination with them, calls to the photographer in many of us. Whether amateur or professional, with a beginner's camera or the finest equipment, the results that come back in slides are sometimes confounding — not at all those cerulean or royal hues remembered but tones quite different. Often what is recalled as violet or unadulterated blue cannot be distinguished from adjacent flowers of cerise or magenta, or perhaps grayish renderings of these. This seems to be much more of a problem with color transparencies or slides than with color negatives or prints.

It is from slides that photographs are reproduced, whether in magazines, catalogs or books, and slides that can be projected, in programs to share or to rent. Slides, then, are our major concern here.

The few books available on flower photography offer little help for capturing the more resistant blues. These are called "problem flowers" and they share what has been dubbed the "ageratum effect." This means that however you vary your method of photographing the ubiquitous blue floss flower it will come out pink. Other flowers that affect film this way include the morning glory 'Heavenly Blue,' *Lobelia erinus* in any blue form, and *Browallia*. The professionals suggest you wait for an overcast sky or until late afternoon, or to photograph in shade or with blue filters. What they haven't suggested is a change of film brand.

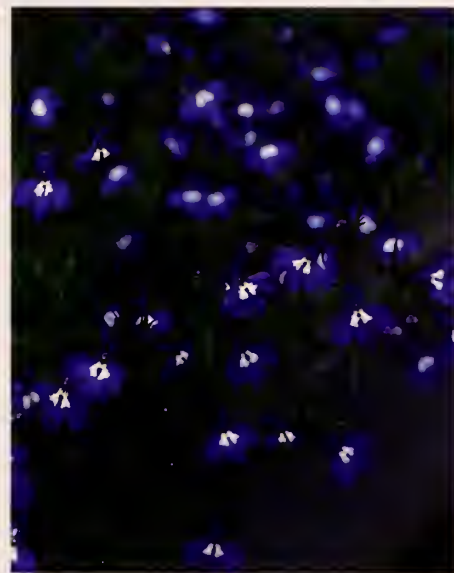
When I began to photograph the garden seriously enough to invest in a good SLR camera, the salesperson recommended that I use Ektachrome, the "professional" EPD 200, which had to be stored in the refrigerator and developed as soon as used. Kodachrome 64, he told me, was a "warm" film

photos by Léonie Bell



Top: Delphinium 'Blue Skies' in a Chester County (Pa.) garden, late June in 1986. **Bottom:** 'Cardinal de Richelieu,' a favorite Gallica rose introduced in 1840. Regularly shown as merely red, especially in English rose books.

More than any other film I know of, with Agfachrome RS 100, what you see is pretty much what you get.



Lobelia erinus 'Mrs. Cliburn,' cobalt with white eye, one of the most prone to exhibit "the ageratum effect."

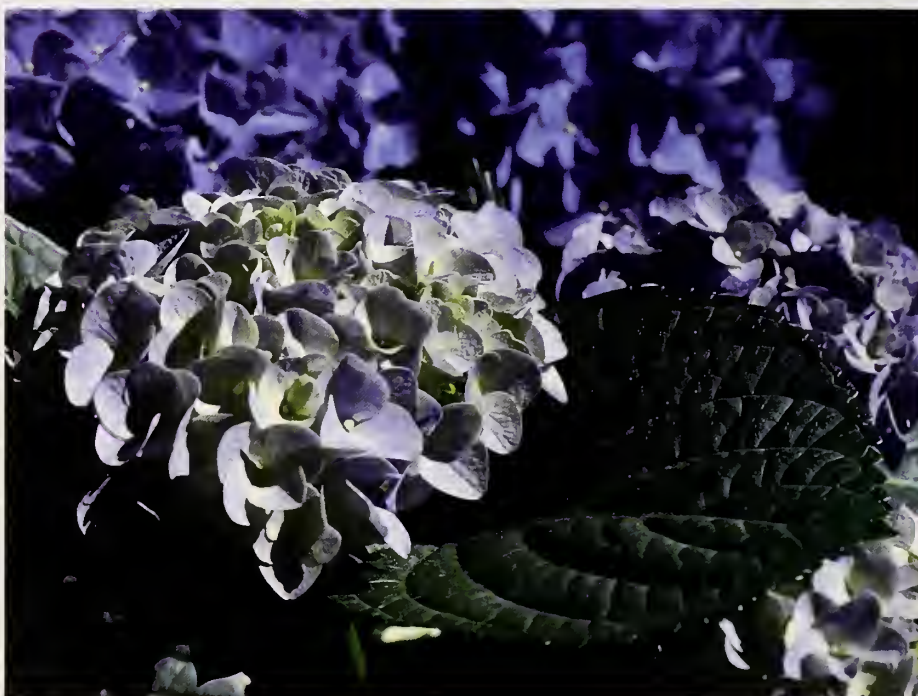
formulated for taking pictures of people, not flowers.

For several years Ektachrome 200 was my film of choice, available only in camera shops with products for professional photographers, sometimes custom-developed, sometimes sent away. For blue flowers the results seemed fairly accurate, but satisfying slides of my beloved purple roses took some calculating. For example, 'Cardinal de Richelieu': when the flower color approximated the actual bloom, the shot had been taken in shade and the foliage was untypically bluish. This happened often, with everything in a blued haze.

Then a correspondent in Massachusetts sent some slides of a particularly rich Hybrid Perpetual, purplish-crimson with an almost black center. I recognized the flower but did not then know its name. Taken in full sun, the flower color looked just right. The film she'd used? Agfachrome, easily bought in her university town.

A single season was enough to convince me I'd found the ideal film for old roses. The bit of blue in the reds and pinks so usual in the old kinds was never masked by a "warm" or yellow tone; the purples came up well in any light, even noonday sun. At the same time the different foliage looked natural, not the flat unvaried green that can occur.

continued



Top: Blue hydrangea, shaded. Bottom: Blue hydrangea, sunlit.

As for the blues, I zeroed in on the 'Heavenly Blue' morning-glory because it is rarely shown in a hue deserving of that name. The first tries fell down only on composition and weather — strong breezes bruise the fragile petal surface. Their color? Unquestioningly blue, whether in sun or shade.

Subsequent work proved the same held true for cornflowers, their living blue so often insipid in catalogs; the small lobelias, varieties like 'Blue Moon' shown as purple; and hydrangeas, their murky mauves a certain clue that a blue kind had been used. All came out refreshingly clear and clean. Home-oriented magazines, catalogs, and even expensive garden books provide plenty

of examples of these skewed blues.

Seed catalog publishers, at least, realize that some of their illustrations are not color accurate and are doing something to correct the situation. I have learned that where flowers in the blue-violet range look fairly right, the original transparency has either been rephotographed with a cyan filter, or has been retouched. If a photo of mixed colors of *Phlox drummondii* has a golden glow, obliterating the attractive violet-blue of some heads, you'll know a warm film was used. The same is apparent in mixed China asters, statice, columbines, even tulips.

The August 1987 issue of *Modern Photography* published a survey of every

brand and speed of slide film available in this country. It was definitely not geared toward horticultural photography. The example of how each film registered natural colors was an arrangement of fruit, green to yellow to red. These are hardly "problem colors." All 19 examples looked about the same. They showed no hard-to-capture blues.

the almost perfect film

In Europe the German-made Agfachrome has been the standard film for decades. People at Agfa-Gevaert tell me their film, in particular Agfa RS 100, is neutrally chrome balanced, this determined by specific dyes. I prefer the 100 speed (ASA or ISO number) because it is fast enough to use in stiff breezes, important when traveling. This speed also eliminates the very dark background shadows in close-ups, common with Kodachrome 64. (If this is the "high contrast" thought an advantage by camera people, I don't want it.) Using it, you can stop worrying about sunlight, shade and time of day in relation to color. Forget filters too. The single filter I use is a polarizer, nice when the sky is included. You don't need an ultra-violet light filter because a layer of ultra-violet filter is part of the film.

A few years ago, Agfa film had to be developed by its own chemicals. Now it takes the E-6 process standard in all American labs. Most camera shops in the Delaware Valley stock an assortment of Agfa films. Because I need a lot, I use the phone and credit card to order "bricks" of ten or twenty rolls from B&H Foto in New York, 800-221-5662.

Is this the perfect film that will capture every problem blue? No, not quite. The ageratum tribe still resists, maddeningly, although the fuzzy flowers taken in shade come out a presentable lavender. Still, more than any other film I know of, with Agfachrome RS 100, what you see is pretty much what you get.

The camera used for these illustrations was a Nikon F2, one of the last manually operated models, with a 55 mm Macro lens.

Botanical illustrator Léonie Bell has been drawing for publication since 1944 when she drew some *Phlox* species for Dr. Edgar Wherry. Several books and many articles later, Bell now publishes and draws for the Heritage Rose Group's quarterly *Rose Letter*, with photography used to illustrate slide talks.

THE TORTOISESHELL YAM: A WINNER

 by Ray Rogers

Imagine their surprise when admirers of my tortoiseshell yam (*Dioscorea macrostachya*) discover what they think is a pile of rocks is, in fact, an essential part of an unusual and elegant plant.

I bought the dormant, 6-inch wide, turtle-like tuber at the 1991 Philadelphia Flower Show after marvelling at massive foot-wide specimens offered for sale in previous years. It sat unplanted, unwatered, and apparently lifeless on my desk from early March until mid-June, when it slowly pushed up a single, leafless, greenish-brown shoot. A little squirt of water to moisten its underside encouraged it to send out a few stubby roots. I quickly assembled a 9-in. shallow bulb pan, a 20-in. conical wire trellis, and a fast-draining soil mix of 1/3 Pro-Mix, 1/3 garden soil, and 1/3 grit (#3 grade sand). I pressed the tuber very shallowly into the mix and set the trellis around it, watering the mix very lightly at first.

For the next few weeks it remained in a bright but not very sunny window, obligingly adapting to the up, down, and sideways training I forced upon it. Its odd tuber and leafless, twining stem inspired friends to offer several common names, the kindest of which was "cowflop."

In early July I put it in the backyard where it received a few hours of late morning and early afternoon sun, a treatment that coincided with (or caused?) the appearance of its first glossy, elongated, heart-shaped, neatly veined leaves. Now seemingly crying out for lots of water, it grew steadily and quickly throughout July and early August as I continued to train it methodically over its support.

In mid-August, prompted by the suggestion that "lots of sun equals large leaves," I carried the burgeoning yam to the sunny front porch where it basked daily in several hours of direct sun and heat. The plentiful sunlight and warmth, plus regular dosings of various quarter-strength liquid fertilizers, judicious removal of excess and damaged leaves, and routine training, produced by mid-September a nearly perfect cone of rich green, shiny leaves ranging from 2 to 7 inches long.

I decided to enter it in The Pennsylvania Horticultural Society's Harvest Show. After a long, hard rain the night before the Harvest Show washed road grime from nearby Lincoln Drive onto my plant, I top-dressed the soil with more #3 grade sand and carefully trimmed any brown leaf tips. The yam was now ready to enter the Show.

After only three months of curious and rapid growth, my tortoiseshell yam won the blue ribbon in the trained vine class. It went on to receive the PHS Bronze Rosette for Ornamental Plants Grown in Containers as well as the National Council of State Garden Clubs' Award of Horticultural Excellence.

After the Show it remained outside until the night temperatures dropped to 40°, at which time I placed it in a sunny window to await its impending deep, leafless dormancy, and its wondrous reawakening next year. Perhaps next fall I'll see the small yellowish-green flowers promised in the literature I was given when I bought the plant.

The author's prize-winning tortoiseshell yam. The brownish, rock-like pile at the plant's base is actually part of the plant.

SOURCE

Anything Grows Greenhouse
1609 McKean Road
Ambler, PA 19002

Frank Niedz

646-4950

The second time Ray Rogers entered The Philadelphia Flower Show, he placed as Runner-up in the Horticultural Sweepstakes. Rogers taught horticulture at the Arboretum of the Barnes Foundation until recently; he is now gardening editor for publishers Dorling-Kindersley.



photo by Ray Rogers

Diospyros kaki

THE ORIENTAL PERSIMMON

 by John and Janet Gyer

On a beautiful Sunday afternoon in October a group of friends sat beside a tree here at Fern Hill Farm. The tree glowed with large four-lobed orange fruit set against glossy, dark green leaves that were just beginning to take on the maroons of autumn color. Each friend selected the fruit that spoke most strongly to him or her of the tropical flavor and soft texture of a fully ripe *Diospyros kaki* 'Sheng' persimmon.

After we feasted, the crop was counted. There were 175 fruits that weighed in at 1/3 to 1/2 pound each on a bushy tree about 11 feet tall and about the same diameter. Each branch was bent in a graceful arc that swung gently in the breeze, but did not break. Our friends picked well-colored but still hard fruits to take home. There the fruit would take about a week to ripen at room temperature in a plastic bag with the company of an apple. Our crop was amazing and well worth waiting for, yet it may not come again for several years.

A cool winter and a moderate spring are ideal for oriental persimmons, but those are not reliably recurring weather patterns in the Delaware Valley. The wild swings from cold to warm temperatures that are common in the winter and early spring can damage developing buds. Temperatures much below zero Fahrenheit can damage the woody branches. Also there are indications that high temperatures during and just after bloom can increase early fruit drop. Because of climate variation, oriental persimmons are unlikely to become a commercial orchard crop in this area, but these persimmons are worthy candidates for home planting. Good varieties form a beautiful small tree that complements the landscape with brilliant orange fall color and provide delicious, attractive fruit for the larder.

Oriental persimmons have an additional advantage for the home gardener. They are not attacked by insects (except occasional aphids on new leaves) and they have only minimal fungal problems. Oriental persimmons, like our 'Sheng,' can be grown to perfection without pesticides.

The oriental persimmon was brought to this country from Japan by Admiral Perry in 1856. His planting did not survive. A collection of kaki cultivars was successfully



Diospyros kaki 'Giboshi.' Hardy oriental persimmon, shown fruiting in October or early November. Known popularly as Smith's best persimmon, it was salvaged by Dr. Shanks in mid-fifties after almost a decade of neglect from overgrown nursery grounds in Front Royal, Virginia.

established by the United States Department of Agriculture between the late 1800s and 1919. This collection formed the base for small commercial plantings in the warmer areas of the United States. In most places the fruit is known simply by the species name kaki.

The name "persimmon" comes from the Algonquian Indian language and is associated with the puckery astringent flavor and the small, soft, brown fruit of the native *Diospyros virginiana*. The oriental persimmon is very different from the native persimmon. The name "kaki" is a good way to refer to the oriental species and its excellent fruit.

Diospyros kaki is native to Japan, Korea, and China where it has been cultivated for thousands of years. In Asia, kaki are highly regarded both for food and for the beauty of the fruit and tree. They often appear in the art and carvings of Japan. The generic name reflects a high regard for the fruit. *Diospyros* is derived from Greek and means "divine grain" or, more in keeping with its oriental character, "celestial food."

In addition to differences in hardness and tree habit, kaki cultivars present an array of shapes, flavors, colors and ripen-

ing habits. Some varieties that are astringent if seedless, lack astringency if pollinated. Some, like 'Sheng,' lose astringency when soft ripe whether pollinated or not. Most have yellow to orange flesh, but a few, particularly when seeded, are brown or chocolate-colored when ripe. Non-astringent or sweet varieties can be firm and crisp like apples.

astringency a problem

The persimmon's reputation for astringency is its major problem. Soluble tannins in the green fruit cause astringency. In nature these tannins may discourage insect pests and thus may be responsible for our ability to grow kaki without pesticides. When an astringent fruit ripens, the tannins coagulate or polymerize into an insoluble form that has no effect on the inherent sweetness and flavor of the fruit. Loss of astringency is speeded by treating harvested fruit with ethylene or ethyl alcohol, which is easy to do. Leave the fully colored, but still hard fruit of an astringent variety with a ripe apple enclosed in a plastic bag at room temperature for about a week. The ripe apple exudes ethylene, trapped by the plastic bag and absorbed by the kaki. The ethylene begins the ripening process that coagulates the tannins and softens the fruit. Test the fruit by gently pinching it every day. When it is just soft, about the feel of a ripe tomato, then it is ready to eat.

The Japanese found a long time ago that kaki stored in used sake casks lost astringency. The residual ethyl alcohol vapors had an effect similar to that of ethylene. The vapors coagulated tannins and the fruit ripened, but did not become soft. Interestingly, this is the sequence of ripening in seeded kaki. The seeds give off ethyl alcohol and acetaldehyde that cause tannin coagulation and loss of astringency. Thus, if an apple is not available, the kaki can be ripened in a plastic bag with a small dish of vodka, gin, brandy or other liquor that is 40% or more alcohol.

doesn't like competition

Like their American cousin, *Diospyros virginiana*, the young kaki tree does not like competition. Both are trees that prefer open sites. They are not too fussy about soil fertility and, when established, they are

continued
the green scene / march 1992



Top left: Flower bud of 'Sheng' — note the large calyx retained in the fruit. **Middle left:** Closeup of 'Sheng' flower. The aborted anthers are typical of female blossoms that may set seedless fruit. **Top right:** Mature fruit of 'Sheng.' **Bottom:** 'Sheng' fruit and fall foliage.

drought tolerant. Good crops are obtained when the trees get the normal watering and fertilization of the average lawn. Avoid high nitrogen fertilizer, however, because it increases blossom drop. Avoid also fertilizing in the fall because it may leave the twigs tender to frost and unable to resist low temperature winter damage.

The best time to set out kaki is in spring when the ground has warmed above 50°F. Mid-May is a good time to set out containerized plants in the Delaware Valley. The best plants are second-year grafts grown on potted understock of American persimmon. The roots are black throughout, a trait common to other members of *Ebenaceae*. The taproot has side roots that are brittle and about the size of black shoestrings. The first time I saw them on a bare root transplant, they looked dead. I planted the tree anyway. The first year growth was slow and weak. The second year it died. I learned later that persimmons are notoriously difficult to establish from bare root transplants. Containerized trees grow very well because they suffer minimal root damage.

I've found that the dormant, containerized trees establish well in garden soil if I gently wash some of the container growing medium from the roots before transplanting. I slosh the root ball around in a five-gallon pail until I can gently disentangle the side roots. I set the plant into a wide hole so that the graft union is at or just below the soil level. The roots are spread out and covered with native soil slightly enriched with well-aged humus. Fresh compost is too biologically active and can promote root rot. The plant is well watered when the hole is about half backfilled. This promotes close contact between roots and soil. The hole is then filled and the plant staked to prevent breakage at the graft union. Wire mesh protection against rodents is advisable for the new tree.

Once planted, the hardest job the gardener has is waiting for the flowers and fruit. It takes about two growing seasons for the tree to establish and begin to bear. Kaki produce square creamy blooms on the lower leaf axils of current year growth. Many will fall off within the first two to three weeks of bloom. If self-pollinated or pollinated by another kaki the remaining fruit will begin to swell and take on the characteristic shape of the variety. Some varieties are male sterile and, if no pollinator is near, they set seedless fruit by a process called parthenocarpy.* The tendency toward parthenocarpy varies from variety to variety and also changes with the

*Parthenocarpy: the ability of fruit to set without pollination, gives rise to seedless forms.

age of the tree. Dr. James B. Shanks, Professor Emeritus, Department of Horticulture, University of Maryland, has studied the culture of kaki in the Middle Atlantic Region for about 30 years. He has found that a spray of 10 to 30 parts per million of gibberellic acid applied at bloom greatly increases fruit set. It is particularly useful for seedless varieties. In some cases too much fruit is set and some thinning is needed to maintain fruit size and tree vigor. Too much fruit production can cause the tree to bear every other year and may make it more susceptible to winter damage.

The oriental persimmon has remained an uncommon fruit here even though the total worldwide acreage planted to oriental persimmons is greater than the acreage planted to any other fruit.

During September the fruit begins to expand rapidly and take on its lovely yellow-to-orange mature color. Individual fruits can be picked in October as they reach color maturity. The fruit with the calyx attached should be cut from the branches, not twisted off. Twisting the tough stems will damage branches and next year's crop.

create your own variety

If your kaki produces seeds, you may be able to create your own variety. Shanks did this when he planted the seed that grew into a fruitful parthenocarpic tree that he named 'Tecumseh' in honor of the street where he lived. Seeds planted in the fall germinate in late spring. The young trees should begin to

SOURCES

Many varieties and forms have been selected over the years. A good collection of hardy forms is offered by these nurseries.

Edible Landscaping
Rt. 2, Box 77
Afton, VA 22920
Michael McConkey
(804) 361-9134

Chestnut Hill Nursery
Rt. 1, Box 341
Alachua, FL 32615
Bob Wallace
(904) 462-2820

Scion Wood available from:

Buckhorn Nursery
Rt. 2, Box 304
Wauchula, FL 33873
(813) 773-6662

fruit in three to five years.

Understock for grafting can easily be grown from fall planted seed of American persimmons. Seedlings should be transferred to at least 8-inch diameter pots and grown until the stem diameter is about that of the available scion wood, usually about the diameter of a pencil (see Sources). Shanks recommends cutting scion wood after it hardens for the winter, but before fluctuating or unusually low winter temperature damages the cambium layer. Scions can be stored under refrigeration at about 40°F in moist sphagnum until understock growth starts in the spring. A simple side graft is effective.* It is best to keep the new graft in a cold greenhouse or protected coldframe over its first winter.

Much commercial kaki grafting is done in Florida, because of the mild climate and long growing season. This does not reduce the hardness of the resulting plants. That is determined by the genetic makeup of the cultivar grafted and not the climate of the nursery's location.

The largest collection of oriental persimmon cultivars in the East is maintained by the University of Maryland. Of the 50 or so cultivars in that collection, however, only about a dozen are easily available from nurseries. Sometimes plants can be obtained from individual gardeners who propagate a few trees for their own enjoyment. From our experience, Janet and I suggest that a first-time persimmon grower plant one tree of an astringent variety such as 'Sheng' or 'Great Wall' and another tree of a non-astringent type. The non-astringent fruit joins a sweet persimmon flavor with the crisp crunch and texture of an apple, a combination that goes well with snacks. The rich flavor and custard texture of 'Sheng' is an interesting contrast for dessert.

recipes

As the trees age and their yield increases, you will have a surplus of fresh fruit. The University of Maryland has collected some fine recipes for the surplus. These are in the University of Maryland's brochure *Persimmons, Fruiting and Landscape Trees for Maryland* by James B. Shanks #112-88.

The recipes for native persimmons in *Old-Fashioned Persimmon Recipes* (\$3.00) published by Bear Wallow Books, Nashville, IN 47448, can be easily adapted to the use of kaki. If persimmons are overheated in cooking, the tannins may depolymerize and become soluble, restoring astringency. Baking soda reduces this problem.

**Plant Propagation Principles and Practices*, Hudson T. Hartmann and Dale E. Kester, Prentice-Hall Inc., Englewood Cliffs, NJ, 1983.



Oriental persimmon provides a gardening challenge beyond raising luscious fruit. This oriental persimmon is a gift from the King of Morocco to the National Bonsai Collection at the National Arboretum in Washington, D.C.

Persimmon Pudding

Our friend Betty Derbyshire gave us this recipe:

2 cups kaki or persimmon pulp
2 eggs
2 cups flour
1/2 tsp. salt
1/2 tsp. ground cloves
1 cup sugar
1 1/2 cups milk

1 tsp. baking soda
1 tsp. cinnamon
1/2 tsp. ground allspice

Combine ingredients and beat well. Melt 1 tsp. margarine in each of two pans. Pour about 1 1/2-inch deep in pans and bake at 350°F for one hour or until dark in color. Serve warm or cold with whipped cream or ice cream. Soft, juicy kaki or native persimmons make the best pudding.

This quote from the Edible Landscaping catalog sums up our experience with kaki: "I never spray them. I don't do anything for them. They just stand there giving lovely fruit and looking beautiful."

John and Janet Gyer garden with native plants at Fern Hill Farm where they also raise Dr. Martin pole lima bean seeds. Overlooking the bean patch are the beautiful oriental persimmon trees that provided the inspiration for this article.

Pin Your Slopes Down



by Nicholas Sclufer

I have observed that many gardeners bring to their projects the same reverence, skill, and appreciation that a gourmet brings to his elegant table; I come to gardening more in the manner of a fast food addict.

One project I approached in short, quick spurts, over a period of several years, was to cover several thousand square feet of steep, non-adjacent slopes, with ivy. These slopes were too steep to mow and too messy-looking to disregard.

I began by using some excess ivy runners from a neighbor's property. She usually cut back her ivy bed each year and placed the strands on her mulch pile. She was glad to let me cut back the bed one year in exchange for the runners. I laboriously planted these, one strand at a time, onto one of my steepest slopes. This method was slow, tedious and precarious (quite a few of the runners failed to take hold). An hour or two of this work did not produce sufficient reward for me to want to continue and so I abandoned the project.

A couple of years later I noticed that this small bed was generating its own runners. I circled around it a few times and then decided to try a "fast food" experiment. I filled some plastic flats with fairly good, but not specially prepared soil. I placed the flats under the growing runners and then put an inch or two of the same soil on top. Time: about 10 flats in one hour. About two weeks later, when I calculated that some roots must have had time to form, I clipped the ivy runners well back into the bed and carried the flats, with runners hanging over both sides, to an adjacent slope. There I slid the whole clump onto the ground without ceremony. Time: ten clumps in under one hour.

This system was an improvement over my earlier attempt; it went much faster and all of these islands thrived without further

The author experiments with clothespins to plant steep slopes quickly and cheaply.

attention. The disadvantages were the runners were difficult to slide over the sides of the flats without breaking up the clump, and they did not spread as quickly as I expected they would. They seemed content to remain in their own little neighborhood, whereas I expected them to invade the entire slope. Also, the ivy runners were too close together for most efficient use. My supply of runners ran out well before my time and energy did.

The next time around I abandoned the flats and, instead, used ten 12" x 36" pieces of 1/4" plywood which I covered with burlap cloth. I used these strips in the same way as the plastic flats, leaving the burlap on the ground to biodegrade in its own time. This new, improved system allowed the clumps to easily slide off the boards without breaking up. They were ideal for use as a nucleus on the steepest of slopes, or anywhere else for that matter. I plan to use this system for future experiments even though it did not solve the density problem.

My next improvement consisted of simply cutting off the runners, laying them right on the ground and putting a couple of shovels of earth over the center of that bunch. A real time saver: ten bunches from cutting to planting in under an hour with no loss of plants. I was becoming very efficient but for some reason my plants were not spreading fast enough to suit me. At this rate I calculated it would take at least six years to fully cover the slopes. Too long. I decided to call in my friendly nursery man to finish the job. He was unable to schedule me in so

late in the season, although he did send some nursery stock in lovely little paper pots, to be planted 6" apart. At 30 cents per plant (then) the cost would be about \$150 per one hundred square feet, not counting at least another \$50 per one hundred square feet if his staff did the job. I minded the cost, and I mourned my failure even more.

The following year I decided to execute one more personal attack on my slope problem.

I armed myself with clothespins.

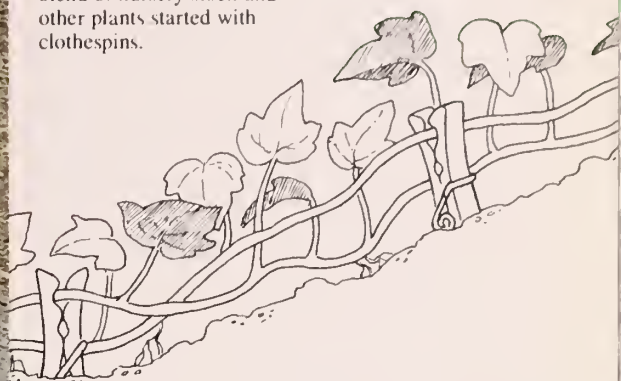
I cut off a batch of ivy runners from an untouched plot (the annual growth averages about four feet). I placed them about three inches apart and used the clothespins at the top and middle to hold the stems tightly against the ground, and also to keep the leaves in a more or less "up" position for efficient growth. I used both the old-fashioned button-type clothespin and, my preference, the spring-type used upside down, with the long ends pressed into the ground. For one hundred square feet of planting I used about 150 clothespins costing 7 cents each (\$10.50). These can be removed carefully after four weeks when the runners have taken root. I decided, however, to leave them in for a full growing season to ensure that I not inadvertently detach the runner while removing the clothespins. Both the nursery stock and the clothespinned runners produce the same results after they have gotten through a full growing season; both methods fill in between spaces at the same rate.

I easily covered a 100-square-foot plot in about two hours, including ground preparation. The amount of ivy I can put in place, in that time, is sufficient reward for the effort. It's "cost effective" both in time and money.

I am casual about ground preparation. I scratch off most of the existing vegetation



Top: A bare area before planting. **Bottom:** A slope planting after three years, a blend of nursery stock and other plants started with clothespins.



with a rake or pull it out by hand. I never use a Rototiller, and I have sometimes planted over existing vegetation if it is not too heavy. The ivy takes over by itself with a minimum amount of weeding.

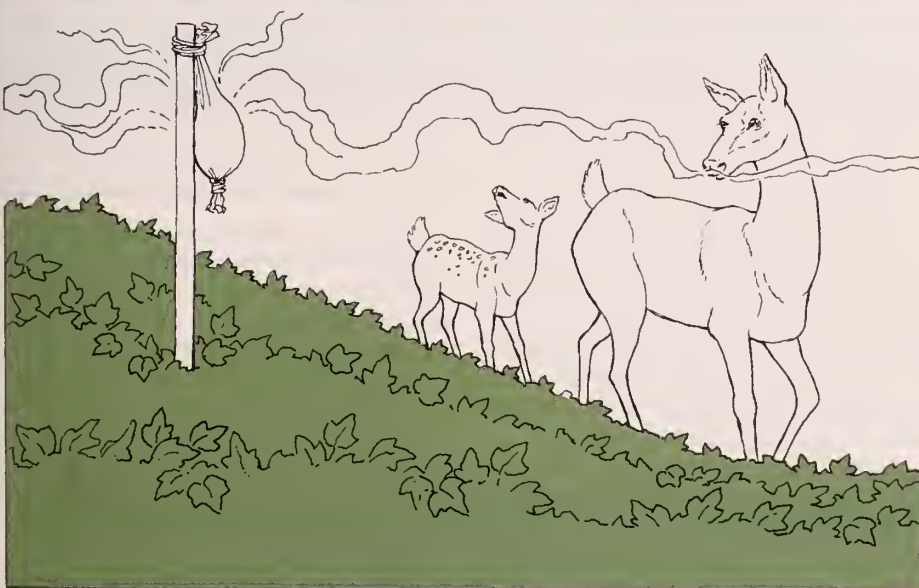
The winter after I'd covered all my remaining slopes using this method, the deer descended in force. By springtime all of the slopes, as well as my spirits, had been seriously damaged.

During the summer, the ivy grew back to cover the bare spots so that it was almost solid by autumn. In the meantime, I staked pieces of Lifebouy soap wrapped in sections of old pantyhose throughout the beds, at about five foot centers, to discourage the deer. The deer avoided those areas and when spring returned the ivy was back to its healthiest density. Unfortunately, I used the soap on only two-thirds of the slopes; I lost all the unprotected ivy. Evidently it could not survive two consecutive years as deer forage.

The steepest and largest slopes are still in excellent condition in spite of the ever-increasing deer population. I use the soap defense each autumn now. The soap turns a reddish-brown and more or less resembles a fallen leaf that has gotten caught in the foliage.

As to the lost ivy, I have planted a small patch of pachysandra, which the deer disdain. If it survives this winter, I shall see if I can devise a quick and economical way of getting it onto the balance of the slopes.

I still have those 150 used clothespins.

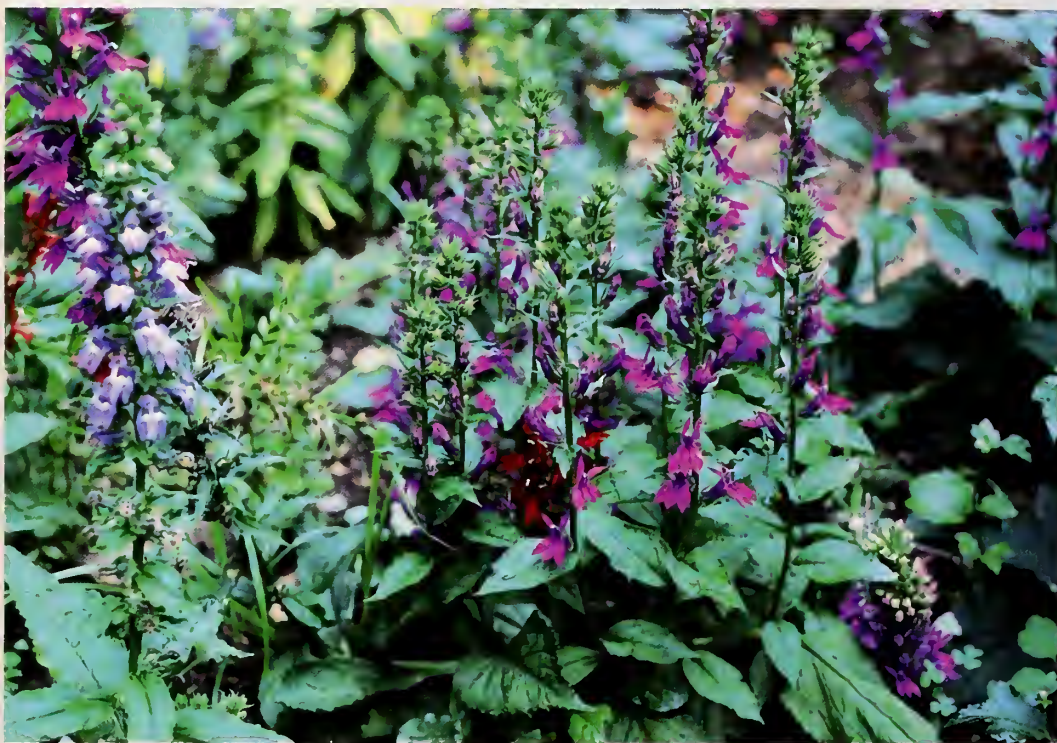


Nicholas Schlufer has designed and built apartments and small commercial properties, some of which he now manages. An inventor, he holds two patents in the energy field (Fusion and Magneto-hydrodynamics). He was the first president of People's Light and Theatre Company and is now an honorary trustee. He is currently working on an interactive video education project and is a member of the board of directors of Commonwealth Federal Savings Bank.

NEW LOBELIA HYBRIDS



by Patricia A. Taylor



The purples, reds, and violets of Thurman Maness's hybrid lobelias create a colorful tapestry at the Leonard J. Buck Garden in Far Hills, New Jersey. This picture was taken in late August 1991; the only maintenance the plants had received was a sporadic weeding in the garden bed.

A new group of gorgeous, low-maintenance perennials have arrived on the garden scene. These disease- and pest-resistant flowers are lobelia hybrids, the work of breeders in the United States, Canada, and Great Britain.

The plants bear spikes of flowers that swirl through the red-blue-white color spectrum in shades of bright pink, rich ruby, and delicate violet, to name a few. Even the foliage has not been immune to horticultural tinkering; plants have been developed with bronze, mahogany, or dark red leaves.

The new lobelias exhibit all the vigor associated with hybrids. They bloom longer, can take both drier and colder situations than their parents, and while favoring partially shaded locations, can also bloom in sunny areas. They not only come in a wide range of colors, but also in heights ranging from 2 ft. to 5 ft. Flowering times also vary, although most follow their parents' example when adding splendor to August and September gardens.

Plant breeders have taken the best qualities of each of three native American species to produce these hybrids. The parents are:



photos by Patricia A. Taylor

Lobelia 'Rose Beacon' is a short (2") hybrid and perfect for a mid-to-front border location.

- Big blue lobelia (*L. siphilitica*). Long designated as a strong but weedy herb (I actually saw one growing this past, drought-stricken summer in a crack between a curbstone and a street).

- Cardinal flower (*L. cardinalis*). Admired for its beautiful, flaming red flowers but notoriously short lived.

- Mexican cardinal flower (*L. splendens*). These flowers are acknowledged to be larger and more beautiful, but they don't do well in cold winters.

Today's new hybrids also draw upon the



Side shoots of the *Lobelia* 'Ruby Slippers' in the author's early September garden. Color film does not completely capture the rich ruby tones of this splendid flower.

work Europeans did a century ago. Some time in the mid-nineteenth century, for example, the 'Queen Victoria' cultivar was produced from *L. splendens*, *L. cardinalis* and *L. siphilitica*. Still grown today, 'Queen Victoria' has bright red flowers, maroon foliage and is hardy to Zone 5.

About the time "Queen Victoria" started gracing European flower gardens, French breeders decided to capitalize further on the positive attributes of the three popular perennial lobelias. They began to create additional hybrids featuring good looks,

hardiness, and durability. They were a great hit on the continent but, as L.H. Bailey noted in the 1915 edition of *The Standard Cyclopedia of Horticulture*, they were little known in American trade.

One of the best known introductions at that time — and finally available commercially in our country today — is *L. x gerardii* or the hybrid purple lobelia. Of obscure origins, this breakthrough flower color meld between blue and red is thought to be derived from *L. siphilitica* and 'Queen Victoria.' It was introduced to the

trade in 1895, after having been grown at the Botanic Garden of Lyon and named for M. Gerard, director of the Garden's botanical collection.

not widely available

Now here's some disturbing news: lobelia hybrids are still not widely available in American horticultural trade. Indeed, Barbara J. Barton's most recent edition of *Gardening by Mail* (3rd Edition, Houghton Mifflin, Boston, 1990) lists only one source for these plants: The Wildwood Flower, a

continued



Thurman Maness labels this plant as *Lobelia cardinalis pallida* 'Angel Song.' It is a rare, possibly the only, two-tone variant lobelia, featuring flowers with a pale, salmon pink outside and a creamy white inside.

28

small mail-order nursery located in Pittsboro, North Carolina.

The Wildwood Flower is owned and operated by Thurman Maness, who grew up in that area, left for a career in marketing in New York City, and then returned to his little hamlet to make a name for himself in the plant world by specializing in the introduction and promotion of lobelias. He, in a sense, follows in the footsteps of last century's French horticulturists.

Working with cardinal flowers, both red and rare white forms, as well as hybrid lobelias and *L. siphilitica*, Maness has created a genetic stew of gorgeous plants whose parentage would be difficult to track.

He boasts that his claim to fame is *Lobelia* 'Ruby Slippers.' Maness introduced this flower in 1989 and predicted that it could prove to be one of the best hybrid lobelias ever grown.

I have had mine for two years now and it is really magnificent. It is, however, a plant that you have to see to believe. Its dark, rich ruby red color does not photograph well; I suspect it suffers from the "ageratum effect," in which the blue tones that we see with our eyes are not recorded by color film.

In my partially shaded bed, 'Ruby Slippers' reaches 4.5 ft. in height and begins to bloom the last week of July. Once the flowers on the main spike have faded, I cut this part of the plant off. Ten side shoots take over, extending the flowering period to the end of September. The flowers pair beautifully with those of the ruby pink 'Alma Potchke' aster.

Barry R. Yinger, department head for horticulture at the Somerset County (NJ) Park Commission, first saw 'Ruby Slippers' two years ago in a North Carolina flower garden. He fell in love with its beauty and,

on that basis, ordered it and 15 other hybrid lobelias from Maness last spring for the Commission's Leonard J. Buck Garden in Far Hills.

All of Maness's plants, Yinger reports, survived last summer's heat and drought without any difficulty. Given the lobelia's preference for moist locations, Yinger had them planted in a seepage area that is constantly moist (in wetter summers, there is standing water in the area).

Yinger recommends Maness's dark pinks and luminescent purples for borders. He says they're "rudely healthy" in their vigor. The creams and whites of the pale forms, he adds, "are lovely but were not as vigorous for us."

I have previously written about my admiration for both the blue and white forms of *L. siphilitica* (*Green Scene*, January 1990). What a pleasure to report here on the ease of care and beauty of the new lobelia hybrids. In addition to 'Ruby Slippers,' I also grow 'Rose Beacon,' a 2-ft.-tall, rose-pink knockout near the front of a sunny border. My only problem now is deciding how many more lobelia hybrids to add to my flower beds!

SOURCES for Lobelia Hybrids

Thurman Maness's The Wildwood Flower remains the best source of lobelia hybrids. While many mail-order nurseries offer *L. cardinalis* and *L. siphilitica*, Crownsville Nursery is the only one I have found that offers a respectable list of cultivars as well, including 'Queen Victoria' and *L. x gerardii*.


The Crownville Nursery
P.O. Box 797
Crownsville, MD 21032
(301) 923-2212
Catalog \$2.00

The Wildwood Flower
Rt. 3, Box 165
Pittsboro, NC 27312
(919) 542-4344

Include a stamped, self-addressed envelope.

Patricia A. Taylor is the author of *Easy Care Perennials*, Fireside/Simon & Schuster, 1989.

A CITY GARDEN CHANGES


 by Libby Goldstein

*If something's not
changing, you can be
sure it's dead.*

Early in my career as a County Extension agent, I went to visit Joe Way, who has since retired as Montgomery County Extension Director. Joe had a collection of dwarf apples espaliered along his front fence. He said he was going to pull them out to try something new. I was used to pitching sick plants, but healthy trees? I was sure he was just teasing a greenhorn agent. He wasn't. I didn't understand at all. I do now. Seasons change. The land changes. Even the weather changes. Gardens and gardeners change too.

photo by Jackson Photography

29



A view through a fence bordered by rue, cleome, viburnum, holly and dittany of Crete.

Eleven years ago I wrote a *Green Scene* piece about my plans for a "new" backyard in South Philadelphia's Queen Village. That part of my garden is 10 years old. Incredible. It doesn't seem that long. Everything's always changing. Raspberries that weren't ready to eat at breakfast are ripe by dinner. Three monkshoods planted one summer turn into seven purple pillars the following fall, and a more or less pink coreopsis disappears entirely.

The land itself has been changing for 300 years. Back then it was a riverside

forest shared by Native Americans and wildlife. Then Swedish settlers built a village. Later, it became a bustling portside industrial suburb. Now it's one of the older Philadelphia neighborhoods. Settlers come from the suburbs. Before the "new yard" was a garden, it was a vacant lot with cars parked upon it; before that, a tiny house.

The little tree that Minnie Townes and I rescued from Ben Allen's axe has become a huge cottonwood. Minnie's gone. Ben's gone. The tree casts so much shade on the yard that I've begun planting ferns as sun

continued

lovers sob and cry for a new home. I wish the tree were gone too. We never should have saved it.

the garden is like my life

Actually, the garden is a lot like my life. There is a basic structure, but I keep adding stuff 'til neither I nor plants can cope. The design hasn't really changed over the years. It's the one thing I haven't redone. Even when the termites ate the old joist boards around my beds and the fence died, I didn't change the pattern. I replaced the boards with pressure-treated lumber, and the fence with treated latticework. The structures are my framework for complexity, growth and transition. The original yard, small, shady and visible through the kitchen door and window affords glimpses of the "new" yard through a gate and through spaces made by removing boards from the old fence. The back garden is divided into raised beds of assorted sizes, framing a zigzag route to the rear deck and back gate. Initially, I imagined I would emerge from the green dusk of the old yard into a sunny, open, rather formal space. Between my propensity to overplant and the plants' propensity to sprawl, I actually trip out into a blooming maze.

Within the beds, things change to suit my growing interests and the garden in my head. New delights may smother past experiments. If I still love the old stuff, I'll move it. If not, it may be left to die, be thrown out or to find a home with Rick Draper, the plant recycler, who gets very emotional whenever I mention planticide. Every day is different in a garden with things coming up and things going past, and, of course, the garden changes with the seasons.

Spring is so neat. It's almost obsessive. Early bulbs bloom within the confines of the beds. Both the sour cherry and the white crepe myrtle have been pruned and are barely dusted with green. After winter's piles of browning Christmas tree branch mulch all over everything, the order is as



In late summer, the overly ambitious gardener must forge through the first bed in the abundant "new garden."

exhilarating as the spring air.

death isn't coming fast enough

By June, there are serious jungles everywhere. It's lush season. Death (or harvest)

Out goes the plume poppy. Gertrude Jekyll never mentioned that it would grow eight feet tall and send rhizomes into the raspberries and all over the neighborhood. Farewell, dwarf apricot, yet to flower when the bees are working. Away with gooseberries. I will not spend another Fourth of July on gooseberry jam.

is coming, but not always fast enough. A month or more of bulbs ripening when my favorite nurseries and my cellar have masses of new and rare seedlings is a kind of hell. I want more space! If plants don't begin dying on their own, I may just lose patience and plant the new guys anyway.

Fall is great fun, just now, anyway. One of my newest gardening games is keeping the yard in bloom as late as possible. Besides the cottonwood loses its leaves, and there's more sun to play in. For the past couple of years I've been planting sages and anemones. Before that there were all sorts of scented geraniums. The monkshood looks absolutely terrific with the pink and

purple morning glories that snuck over the fence from next door. And there are still raspberries to pick for breakfast when I feed the birds theirs.

I'm always curious about plants I haven't tried, about their colors, forms and flavors and whether I'll be able to grow them here. I do nurture, divide and dead-head some favorites religiously or plant them year after year. Some plants outlive my taste for them or just don't work out. Out goes the plume poppy. Gertrude Jekyll never mentioned that it would grow eight feet tall and send rhizomes into the raspber-

ries and all over the neighborhood. Farewell, dwarf apricot, yet to flower when the bees are working. Away with gooseberries. I will not spend another Fourth of July on gooseberry jam, nor will I spend another minute walking like a duck to trim the Dutch clover in the paths between the beds. Bark chips will do very nicely, for now, anyway.

The original yard now has little more than a non-bearing apple, my blueberry bushes and golden muscat grape vines that actually grow out to the new yard and over the fence. They're my privacy screen. I tried under-planting the apple with shade-loving native shrubs. It was to be truly woody and green much of the year. The apple, however, is perfect for hanging bird feeders that I can watch through the back door. I've even pruned it so that I can see the farthest feeder from my favorite chair. I fill the feeders with sunflower seeds every morning. Birds are not neat eaters. Only a few shade-loving annuals and tons of red wigglers survive the constant snow of seeds and shells. Sitting at the kitchen table, I've seen over forty species of birds at, under and over the feeders. Truly woody or not, the birds are fascinating. It's been a good trade off.

The garden in my head and on my land is remade by other people's gardens, by books and catalogs, by my moods and by the rest of my life. In my Asian period, I was bewitched by the Cantonese elders and

continued



The original yard today. When the author bought the house in 1973 she had the concrete terrace ripped out and planted the blueberries, apple tree and dwarf bamboo.



The Blooming Maze, also called the 'New Yard.' Mixed perennial bed, white crepe myrtle, June raspberries and a dwarf cherry tree.



Edible gardening. Grapes for the author's juices, vinegars and jellies drape the fence.

new immigrants from Southeast Asia who were gardening all over Philadelphia. I grew bananas because I'd seen them in Dona Valentina Rios's garden in West Kensington. They led me to citrus and pigeon peas (*Cajanus cajan*) among other

subtropical goodies. My fruit phase came from the lack of stuff like white nectarines and green gage plums in the market. Tex-Mex year was inflamed by work assignments in Texas and Southern California. Tomatillos, the cucumber beetles' love boat, fronted a trellis disguised as a jicama (*Pachyrhizus erosus*) hedge. There was even "Income Insurance Year." The feds tried to cut the Urban Gardening Program out of their budget. Unemployment loomed. My beds overflowed with cut flowers, herbs and "high-value crops." Some of them even got to market.

Just now the new yard looks vaguely like an English cottage garden. Lots of white stuff lights it in the evening, and I'm usually in search of really blue flowers, not those blue violet to purple things that gardeners insist on calling "blue." I'm almost tempted to turn one of the beds into a water garden, but the kids around here are super fence climbers. Floating children do not quite suit my esthetic or my insurance carrier. Off and on, I'm tempted to pull out the leatherleaf viburnum and plant a persimmon instead. I'm not even sure why. A person can buy all sorts of persimmons at the market. It's just tempting to see if I can grow it and actually get fruit. For the moment, I've rejected a New American garden and all those yellow daisies. (Some

of the grasses are really neat, though.) And then there's my new neighbor, who may decide to sell off a piece of his yard, the part on the other side of my fence. Another "new" garden might be just the thing, especially since it already has a raspberry patch that migrated under the fence.

Gardens aren't meant to be the climax forests that once covered this place; even they cycled and recycled. I'm not even sure they are meant to be restored to their historic roots, even if they were made by Thomas Jefferson or Gertrude Jekyll. They'd have changed over the years and so would their gardens. If something's not changing, you can be pretty sure it's dead, or changing so slowly you just don't see it. You can watch life flowing daily, if not hourly in the garden. You can design change, modify it and play with it. And if you make a mistake, like saving your neighbor's tree, you can adapt to change (if you can't convince the new neighbor to take it down).

Libby J. Goldstein writes about food and gardening for local and national publications. In addition to the garden she writes about here, she works a plot on Philadelphia's newest permanent gardening park: Southwark/Queen Village Garden.

LETTERS TO THE EDITOR

POISON IVY AID

Your Jan.-Feb. *Green Scene* had a wonderfully written and beautifully illustrated article on poison ivy, but the author didn't mention a product I've found to be useful as a prevention and cure. I have a landscaping business and was for many years afraid of poison ivy, refusing some jobs to avoid it. However since I've found Tecnu, which is a preventive and much better cure than calamine lotion, the fear is gone. I always carry Tecnu in my van and have any workers who tackle poison ivy use it on hands, wrists and face (still using gloves though) before working. It works up to eight hours. If you get into poison ivy accidentally, you can use Tecnu after the fact and still avoid the rash. If by any chance you've missed a spot and end up getting the rash, Tecnu Poison Oak & Ivy Cleanser is a soothing lotion which speeds healing.

Please inform gardeners that they don't have to put up with the agony of poison ivy rash anymore.

Judith M. Simpson
Ambler, Pa.
continued

P.S. I usually order mine from Gardener's Supply Company but the address on the bottle is Tecnu Laboratories Inc., P.O. Box 1958, Albany, OR 97321.

The Author replies:

I have read advertisements for Tecnu Poison Oak-N-Ivy Cleanser, but have no personal experience with it. Your testimony to the effectiveness of Tecnu agrees with that of the Kinsman Company (Point Pleasant, Pa.) whose Gardener's Catalog states, "... we can testify that Tecnu really works for us." (Their number to order by phone is 1-800-733-5613.) Readers should continue to avoid all unnecessary contact with poison ivy; caution remains the most important defense against it.

Carol Fletcher Daniels
Ambler, Pa.

WHAT TO DO WITH BLUE

I wonder if there is something that you as the editor of a major horticultural publica-

tion can do to lower my frustration level. It makes me truly nuts to find magazines and catalogs describing purple to lavender flowers as blue.

Only rarely does one find a publication that distinguishes between the various shades of purple and actual blues. A person who wants to grow actual blue flowers can't trust the printed word at all. The only way to distinguish violet from blue varieties is to go see the living flowering plant.

I don't know where the convention began, but the various words for purple shades seem totally out of favor in American and English publications.

I do hope you will take my *crie de coeur* to heart and share it with your fellow garden writers and editors.

Libby J. Goldstein
Philadelphia, Pa.

The Editor replies:

Consider it shared. For more fun see Léonie Bell's article in this issue about the woes of photographing blue flowers (page 16).

continued

CRATAEGIS VIRIDIS 'Winter King'

As a retired nurseryman from Michigan and in the business for 34 years, I can vouch for the merits of the Pennsylvania Horticultural Society's selection of *Crataegus viridis* 'Winter King' (Jan. *Green Scene*, p. 5) as one of the 1992 Gold Medal Plant Award winners. It is an excellent choice. All my stock over the years came from the grower: Simpson Nursery Co., P.O. Box 2065, Vincennes, IN 47591, (812) 882-2441.

I vividly remember viewing the original seedling pointed out to me by Robert Simpson as we drove down a farm lane adjacent to his nursery.

It had grown up along the road easily seen and as Bob tells it, "after observing it for many years, I decided that it should be propagated." Since he propagated *Malus* on a large scale, it was not a problem to put this plant into production.

The real beauty of this small tree is in its lavish fruiting, hence its name, 'Winter King.' I am enclosing color prints of a specimen planted in the early '70s by my company on a very busy street in Detroit. This tree does well under conditions of city pollution.

I consider it a superior introduction for all conditions. I offer this opinion after planting hundreds and observing them over many years.

I am sorry that the two pictures in *Green Scene* of this *Crataegis* were both of the flower stage. After all, the fruit is the most breathtaking stage.

photo by Larry Albee



Crataegus 'Winter King' fruits lavishly (photo taken in late October, early November).

Robert Simpson, age 86, is still a very active nurseryman. I'd like to see him recognized in *Green Scene* in view of his *Malus* introductions as well as this *Crataegus* selection, and we should not forget his deciduous *Ilex* interests, that are coming on strong in the marketplace.

He is as good as they come for our industry as I see it!

Alfred H. Goldner
Bloomfield Hills, Mich.

The Gold Medal Plant Awards Coordinator replies:

Gold Medal Plant Awards acknowledge plants rather than the people behind them. We recognize that the stories behind the

plants are always as rich as the plants themselves and are proud of the many esteemed growers, breeders and nursery-people who have dedicated their lives to seeking out fine garden plants and who support the PHS Gold Medal Plant Award program. Robert Simpson is one of these people, and we appreciate your taking the time to share a part of his story with us.

Cheryl Monroe
Pennsylvania Horticultural Society

SNOWFLOWERS

In her article, Snowflowers (Jan/Feb *Green Scene*, p. 28), Toni Brinton expresses interest in sources for *Daphne odora*. Two catalogs in my collection list it:

Roslyn Nursery, 211 Burrs Lane, Dix Hills, NY 11746, (516) 643-9347 and Wayside Gardens, 1 Garden Lane, Hodges, SC 29695-0001

Roslyn also lists Gold Medal winner *Magnolia grandiflora* 'Edith Bogue.' As a long-time admirer of other people's bull bay magnolias, I'm delighted to have news of tough 'Edith Bogue' and plan to make one of Roslyn's little (8"-12") trees my own.

Thanks for another interesting issue.

Janet French
Mechanicsville, Pa.

CLASSIFIED ADS

HOSTA COLLECTION

Quality Hosta Collection. \$30 Postpaid. 5 plants, all 2-year divisions, all named. Some old, some new, some Gold, some Blue. Send for complete list and prices. (302) 378-2829 E.B.H. Hostas, Box 176, Odessa, DE 19730.

BRIAN J. TEMME TREE SERVICE

- Quality Tree Care
 - Pruning, Trimming, and Removals
 - Fertilization, Disease and Insect Control
 - Cabling and Stump Removal
- (215) 572-5665 or (215) 657-0555

GARDEN DESIGN ARCHITECTURE & SITE PLANNING

Todd R. Phillippi, AIA
Integrated Design Specialists
Free Newsletter
(215) 750-8770

TREE & GARDEN LIGHTING POND & POOL LIGHTING

Add a warm touch to the patio and outdoor area year round.

John J. McGettigan, Inc.
Flourtown, PA 19031

215-233-4900 Est. 40 yrs. 215-233-1030

SUBSCRIBE TO GREEN SCENE, The Magazine of The Pennsylvania Horticultural Society.

Only \$9.75 for 6 issues. Make check payable to The Pennsylvania Horticultural Society.

Send to: Linda Davis

Pennsylvania Horticultural Society

325 Walnut Street

Philadelphia, PA 19106

For more information call Linda Davis
(215) 625-8265 or (215) 625-8250.

GARDEN VISITING HOURS

Longview Farm
Bodine Road Box 76
Malvern, PA 19355

Noon to Dusk
April 15th to October 15th
Thursday—Friday—Saturday
Admission \$5

Children under 12 free

Appointments necessary for large and out-of-town groups with schedules.

Unusual plants for sale.

You are welcome to bring a picnic to eat in the barnyard.

Map mailed on request.

Joanna Reed, Gardener

MANAYUNK — HIGH ON A HILL

Lovingly renovated 3-story townhouse. Low maintenance Euro style garden with flagstone patio, abundant perennials and 50-year-old *Magnolia soulangiana*. Also, sunny roof garden for vegetables. 2 master suites (or 3-4 bdrms), top-of-the-line gourmet kitchen, fantastic views! \$105,900. By appointment. Contact Michael Groman: (215) 482-2442.

THE CLASSIC LOOK OF A GARDEN

Designed for today's lifestyle.

Plantings, Rock & Boulder Work, Artificial Ledges and Waterfalls.

Designed, installed & warranted exclusively by E.G. WITOMSKI CO.

Since 1976.

Inquire (215) 565-8826

GET THE LATEST ON GARDEN EVENTS

ACROSS THE COUNTRY. The Garden Tourist '92 gives you everything you need to know about nonprofit Garden Tours and Events in one handy Comprehensive Guide. Send check or m.o. for \$8.95 to The Garden Tourist, Dept GS, STE 14A, 290 West End Avenue, New York, NY 10023.

**New in 1992! — MARCH 28 & 29
LAWN & GARDEN EXPO
AT WATERLOO GARDENS
FREE ADMISSION**

Bring the whole family!
Exhibits from leading Gardening
Suppliers, Exciting Seminars,
Spectacular Displays & Demonstrations
for the entire family, including
hands-on activities for the children!
All Seminars are \$10 — Call for schedule.
All Children's classes \$1 — Please register.
Exton Only.

WATERLOO OFFERS YOU MORE:

- Award-Winning Landscape Design
 - Over 1,200 cultivars of Perennials
 - Over 100 varieties of Herbs
 - Aquatic garden plants & supplies
 - Pools, Fountains, and Statuary
 - Unique Seeds and Bulbs
- "Your English Garden Connection":
Direct Import of Garden Tools,
Accents, and Supplies
- Rare Specimen Plants
 - Garden and Patio Furniture
 - Exquisite Gift & Gourmet Shops
 - Outstanding Selection of Easter plants
 - European Dish Gardens
 - Orchids • Bonsai • Topiaries

**WATERLOO GARDENS
DELAWARE VALLEY'S
LARGEST GARDEN CENTER**

Two Locations — Open 7 Days a Week
Exton — 200 N. Whitford Rd. (215) 363-0800
Devon — 136 Lancaster Ave. (215) 293-0800

OUTSTANDING GARDEN PROPERTY. French Colonial, 4 br, 2½ baths, lr, dr, prof. kitchen, breakfast room, fam. room, study, sewing room—laundry, sunroom—art studio, daylight basement w/recreat.—dance studio, 3 fireplaces, deck w/screenporch, stone terr. w/fish pools, numerous types of shady groundcovers under mature trees, island perennial beds provide March–November blooms, sunny & shady wetland plants, thousands of bulbs, variety of evergreen & deciduous flowering shrubs, on open space w/stream. ½ hr. to CC. Radnor schools. \$449,000. (215) 525-2319.

TOUR OF HOLLAND AND BELGIUM. Featuring noted gardens & full day at Floriade 1992. First class hotels in Amsterdam, Bruges and Antwerp. Custom itinerary w/knowledgeable guides. July 1-18, 1992. Call Franklinton Travel: (215) 836-1424.

DISPLAY FLORIST/GARDENER

Longwood Gardens has an outstanding employment opportunity in the Horticulture Department. Duties incl: des. & coord. floral arrang. for special functions & assisting with the des., inst. & maint. of seasonal & planted-in displays.

Must have at least an A.S. Degree in hort. or equiv. & possess a thorough & broad knowledge of floral design, esp. for lg-scale parties & special events. Exp. in display work req. Greenhouse prod. &/or interiorscaping exp. helpful. Resume to: **Mr. Kiran Taunk, Business Division Manager, Longwood Gardens, Inc., P.O. Box 501, Kennett Square, PA 19348-0501.** EOE, M/F.

PERENNIAL FLOWER PLANTS

Over 500 varieties offered in two sizes. Starter plants in cell packs of 1-year-old flowering size. Send \$2 for catalog (refundable) to Perennial Gardens and Nursery, 2566 Brick Church Rd., Weedsport, NY 13166 (315) 626-2482

AFRICAN VIOLETS & GESNERIADS

America's Finest — WRITE for 1992 catalog and tips, 50¢. VISIT our lovely greenhouses. FISCHER GREENHOUSES, Poplar Ave., Linwood, NJ 08221 (609) 927-3399. Open daily, incl. Sunday.

**Outdoor Furniture Specialists
Hill Co.**

Create an exciting outdoor living area with a visit to the Hill Co. Distinguished collection of outdoor furniture and accessories, wicker, and rattan. Showrooms fully stocked year round.
(215) 247-7600

8615 Germantown Ave.
Chestnut Hill

**LARGEST SELECTION OF
RHODODENDRONS & AZALEAS**

on the East Coast with many new varieties. Also Kalmia, Pieris, and many companion plants. Mail order catalog, \$2. **ROSLYN NURSERY**, Dept GS, Box 69, Roslyn, NY 11576.

COMFORTABLE GARDEN FURNITURE

English Regency Style
Carefully Hand Forged
Entirely Hand-Riveted
Fred B. Odell
6209 Upper York Road
New Hope, PA 18938
(215) 794-8967

WOODLANDERS

RARELY OFFERED DIXIE NATIVES AND INTRODUCTIONS, woody herbaceous, all nursery-grown. Many hardy northward. Send \$1.00 for mail-order list.

WOODLANDERS GS

1128 Colleton Ave., Aiken, SC 29801

AFRICAN VIOLETS

100 varieties, standard, micromini, miniature, trailers, variegated types. Greenhouses open daily. Cultural book, \$6.95 ppd. Color catalog 50¢. **TINARI GREENHOUSES**, 2325 Valley Road, Huntingdon Valley, PA 19006 (215) 947-0144

LIGHTING BY FILLMAN

Specializing in
LANDSCAPE • GARDEN • DECORATIVE
Lighting
DESIGN • INSTALLATION • SERVICE
Also — Patios • Decks • Driveways • Walks
G. LYNN FILLMAN (215) 766-7645

DISCOVER YOUR HIDDEN GARDEN

Low-voltage lighting systems for your garden, deck, patio, pool, spa or greenhouse.

- safe, reasonably priced and economical to operate
- installation does not disrupt existing planting

Call (215) 376-1181 or 374-2036 for a no-obligation consultation and price estimate.

THE LANDSCAPE LIGHTING COMPANY

**THE UNIQUE BEAUTY OF
ORNAMENTAL TREES**

Dealers and locators of large, mature standard and rare plant material, including arboretum-quality specimens, serving landscape architects, designers, contractors, and private individuals.

Our services also include:

- planting and transplanting of large trees
- assessing and renovating mature collection and estate gardens
- we will purchase large trees.

TREE TRANSFERS INC.
(215) 635-2310

**ROBERT W. MONTGOMERY
LANDSCAPE NURSERY
Chester Springs, Pa.**

is proud to stage
the 1992 Central Feature Exhibit
of the Philadelphia Flower Show

"Horizons for Discovery"
A Southwest Courtyard
and Desert Garden

Call for a landscape design consultation with the Philadelphia Flower Show's 5-time "Best in Show" winner. Robert Montgomery's professional design and contracting staff, specialists in all phases of landscape construction and planting, collaborates closely with the property owner to assure satisfaction.

Visit our full-service Nursery,
Garden Center and Greenhouses

Over 1,000 Perennial
Varieties in mature sizes
Trained Horticulturists
on staff daily

Top-of-the-Barn Patio
Furniture Showroom

Our Only Location:
Route 113, Chester Springs, PA
363-2477
Open 7 Days a Week

MEADOWBROOK FARM
1633 Washington Lane
Meadowbrook, PA 19046
887-5900 Mon-Sat 10-5

AN ENCHANTING EXPERIENCE

awaits you in our gardens and greenhouses. Choose from lovely geraniums, beautiful annuals, thousands of perennials and flowering and evergreen shrubs that are perfect for sunny, shaded or groundcover areas. Accent your garden with rare plants, topiaries, fountains, statuary or beautifully planted patio pots. Unique gift and baskets of blooming plants are our specialty.

For The Better Things in Gardening
MEADOWBROOK FARM

**REED'S WOODS
QUALITY WORK AT A FAIR PRICE**

Springhouse Restorations
Additions/Renovations
Decks, Flagstone, Brickwork
Carpentry & Landscape Structures
Call for Free Estimate
76-A Bodine Road
Malvern, PA 19355
(215) 827-9663

Bamboo Fencer

Let the Bamboo Fencer create for you custom-designed fencing, gateways, fountains or other structures of bamboo for your garden and home. Beautiful as sculpture, rugged and versatile, bamboo is an "Earth kind" delightful alternative. We build and install or ship to your site. Cat. \$2 (Refundable).

Bamboo Fencer, 31 Germania St.
Jamaica Plain, MA 02130
(617) 524-6137, FAX (617) 524-3596

B&B on Burpee Family Estate

Historic Fordhook Farm, home of pioneering seedsman, W. Atlee Burpee, is open to the public as a Bed and Breakfast Inn. Reserve for Flower Show Week now. The Inn at Fordhook Farm, Bucks County, Pennsylvania (215) 345-1766.

WONDERFUL SPEAKERS. WORKSHOPS. TOURS.

ALL ARE INVITED to the 1992 National Council of State Garden Clubs, Inc. convention, May 18-20, 1992. For details, send SASE to Sandy Manthorpe, Chair, 101 W. Rose Tree Road, Media, PA 19063.

OVER 2,000 KINDS of choice and affordable plants. Outstanding ornamentals, American natives, perennials, rare conifers, pre-bonsai, wildlife plants, much more. Descriptive catalog, \$3. **FORESTFARM**, 990 Tetherow Rd., Williams, OR 97544

INDIAN RUN NURSERY RHODODENDRONS

New Jersey grown, small-leaved and large-leaved species and hybrids. Iron-clads and Eastern hybrids of Dexter, Gable and Nearing our specialty. Landscape sizes available: 3-6 ft. of specimen quality. Also *Pieris japonica* and azaleas in large sizes. By appointment only.

INDIAN RUN NURSERY
400 Allentown Road
Robbinsville, NJ 08691
(609) 259-2600

DR. MARTIN POLE LIMA BEAN SEED

1991 Crop of excellent quality and quantity. For Order Form write Fern Hill Farm, P.O. Box 185, Clarksboro, NJ 08020.

DEER PROOF PLANTS

HAVE BEAUTIFUL LANDSCAPES
AND YOUR WILDLIFE, TOO

We grow plants resistant to damage by deer. Now your landscapes can be varied, beautiful, and you can live with the Deer, too!

CONTACT US

HILDEBRANT NURSERIES
OLDWICK NJ
" ESTABLISHED 1923 "
908-439-2256

GARDEN DESIGN — Design and installation of specialty gardens including perennial borders, herb, kitchen and English cottage gardens.
CAROL MANICONE (215) 348-4830.

DISTINCTIVE

PENNSYLVANIA-GROWN PLANTS

for gardening and landscaping. Many scarce, rare and unusual selections along with hardy natives available. Call or write for FREE catalog.

APPALACHIAN GARDENS

Box 82
Waynesboro, PA 17268-0082
(717) 762-4312

AMERICAN GREENHOUSE SYSTEMS

- Maintenance on ALL greenhouses — IBG, Janco, L&B, Rough, National, etc.
 - Refurbishing older greenhouses
 - Sales of Poly, Lexan and Glass Enclosures
 - Redwood and Aluminum Solariums and Conservatories
 - Yearly Maintenance Contracts
- P.O. Box 817 Malaga New Jersey 08328
(609) 694-3500 FAX (609) 694-1840
(800) 676-3505

JAMES FARR LANDSCAPE CONSTRUCTION

- Planting and masonry design/installation
 - Pools, waterfalls, drainage systems, Japanese gardens, traditional/contemporary gardens, etc.
- (215) 884-1720

Plants for Sale

- *Sciadopitys verticillata* — approx 14 ft., \$2,800
 - *Acer palmatum dissectum* 'Atropurpureum' 10-12 ft., \$3,200
 - *Pinus bungeana* — 12-14 ft., \$1,200
- Many other plants available!

James Farr
(215) 884-1720

CONTEMPORARY STRUCTURES FOR HOME AND GARDEN

At last! Great new designs for those garden necessities. Arbors, Trellises & Gates, built in steel to last. Write or call for catalog.

The Painted Garden, Inc.
304 Edge Hill Road
Glenside, PA 19038
(215) 884-7378

SHANAHANS' WELCOMES SPRING!

- 200 Acres of field-grown conifers, deciduous trees and shrubs in enchanting Chester County.
 - We serve the volume buyer as well as the "one-of-a-kind" seeker.
 - Containerized dwarf conifers, foundation plants and young trees.
 - Azaleas, rhododendrons, mums, perennials, roses.
 - Gift certificates for all seasons.
 - RETAIL AND WHOLESALE. EST. 1965.
- Please call for an appointment and/or list of selections. We are open every day except Monday.

SHANAHANS' TREE FARMS AND NURSERIES
R.D. #2, BOX 73B
HONEY BROOK, PA 19344
(215) 273-3318

PENNSYLVANIA'S BEST

Oak Bark Mulch — Dark, Fine Shredded. Picked up or delivered in bulk. Mushroom Soil & Topsoil also available.

(215) 483-8922 (215) 482-1711

LINDA CORSON LANDSCAPE DESIGN

- Consulting
- Plans
- Supervision

Member ASLA
Registered Landscape Architect
215-247-5619

COX & CO., INC.

Tree and Landscape Services.
Tree preservation, planting, removals.
(215) 687-1780
Nursery: 15 Airport Rd., Limerick, PA 19468

David Brothers BEAN ROAD NURSERY

Landscape Architects, Builders
and Nurserymen
Providing the Fine Art of Garden Construction
and Landscape Restoration
QUALITY SERVICE WITH COURTESY
AND RELIABILITY
EDGAR and KIM DAVID
247-2992 584-1550

GREENHOUSE CONSTRUCTION Sales and Service

Janco, Lord & Burnham and more.
Call Robert J. LaRouche at
Glass Enclosures Unlimited
228 Poplar Avenue
Wayne, PA 19087
(215) 687-2444

GRACIE'S NEW AGE EATERY & 21ST CENTURY CAFE

Healthy Food in a Nourishing Environment
MANATAWNY ROAD, PINE FORGE, PA 19548
(215) 323-4004

The Philadelphia Flower Show.
Landscape Design and Planning.
Installation and Renovation.
For the Country Garden
Herbs from the Finest Growers
Over 100 Varieties
The Best Plants Featuring
The Styer Award Winners
Garden Accessories and Necessities
Lead Stone Terra-Cotta
Tools to Last a Lifetime
Water Gardening Pool Supplies Books
Bonsai Tools Pottery Plants
Shade Color Fragrance
Experience the Pleasure of Gardening
J. Franklin Styer Nurseries
Since 1890
Celebrating 100 Years in Horticulture
Open Seven Days A Week
(215) 459-2400



Orange lilies and *Nigella damascena*
'Miss Jekyll's Blue,' in a Chester County
(Pa.) garden. See Blue Flower Challenge:
How To Get a True Blue Photo on p. 16.

GREEN SCENE

THE MAGAZINE OF THE PENNSYLVANIA HORTICULTURAL SOCIETY • MAY/JUNE 1992 • \$2.00



*This Farm Cooperative
Feeds 160 Families
See page 3*



10



14



29

Front Cover: Fifth graders from Kimberton Waldorf School on the annual potato dig at the farm cooperative. Teacher Gerard LoDolche (left, standing, blue shirt, white shorts, head obscured) and work program coordinator, Tjitske Lehman (right, jeans, white shirt, blond hair). Story, page 3.

Front Cover: photo by Mary Lou Wolfe
Back Cover: photo by Liz Ball



in this issue

3. This Farm Cooperative Feeds 160 Families

Jane G. Pepper

7. Irises That Rebloom

Lucy Fuchs

10. The Bee Rescue

Liz Ball with Jim Castallan

14. Prepare a Five-Year Plan for Your Garden

Todd R. Phillippi

18. Horticultural Spray Oils: A Safer Way to Control Pests?

V. Bruce Steward

21. The Rock Wall Garden

Judy McKeon

25. Garden in the Shade

Kathleen A. Mills

26. A Shady Townhouse Garden

Ken Druse

29. Rhododendron Fever

Fred S. Winter

32. Slug It Out with the Slugs

Patricia A. Taylor

33. Plantfinder

33. Classified Advertising

CORRECTION: We regret that the purple flower on p. 29 of "The Snowflowers" in the January issue of *Green Scene* was incorrectly identified. It is *Pulmonaria angustifolia* not *Primula abschasic*.

The Editor

Volume 20, Number 5 May/June 1992

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Monday through Friday 9:30am to 12 Noon (Hotline is closed in December)

Membership Information: Linda Davis, 625-8265

Donald L. Felley / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

Joseph P. Robinson / *Editorial Assistant*

Carol C. Lukens / *Editorial Assistant*

PUBLICATIONS COMMITTEE:

Anne S. Cunningham / *Chair*

Kathryn S. Andersen

Walter G. Chandoha

Judy Foley

Charles W. Heuser

Gene Jackson

Anthony A. Lyle

Robert McCracken Peck

Mary Lou Wolfe

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendells' Graphic

Printer: Howard Printing

The GREEN SCENE, (USPS 955580), Volume 20, No. 5, published bimonthly, January, March, May, July, September, November, by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$9.75—Single Copy: \$2.00. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1992

Green Scene subscriptions are part of the membership benefits for:

Blithewold Gardens and Arboretum, Bristol, Rhode Island
Botanical Garden at Asheville, North Carolina
Cox Arboretum, Dayton, Ohio
Frelinghuysen Arboretum, Morristown, New Jersey
Hershey Gardens of Hershey, Pennsylvania
Maryland Horticultural Society, Baltimore, Maryland
Pennsylvania Horticultural Society, Philadelphia, Pennsylvania
Phipps Friends, Pittsburgh, Pennsylvania
The San Antonio Botanical Gardens, Texas
Staten Island Botanical Garden, Inc., New York

This Farm Cooperative Feeds 160 Families

 by Jane G. Pepper

Invited up from North Carolina by families associated with Kimberton Waldorf School in Chester County, the Sullivans operate a cooperative farm using bio-dynamic principles.

Dawn on a July morning at the Kimberton organic garden. Time to harvest the Canasta lettuce.

photo by Mary Lou Wolfe

This Farm Cooperative Feeds 160 Families

photos by Mary Lou Wolfe



Here's a puzzle. How much land do you need to grow enough vegetables to satisfy the needs of 110 families you've never seen? How many tomato plants, how many rows of corn, how many beans can they eat? Will they eat okra or beets, Chinese cabbage or arugula, and how many enjoy using herbs? These were the questions Kerry and Barbara Sullivan faced seven years ago when they responded to an invitation to put together a proposal to start a community-supported bio-dynamic garden near Kimberton, Pennsylvania. The invitation came from a group of families associated with the Kimberton Waldorf School; the land on which the Sullivans would garden was part of Seven Stars Farm, a bio-dynamic farm.

The Sullivans met while studying in California with Alan Chadwick, the American disciple of Rudolph Steiner, who taught and wrote extensively in Europe between the World Wars about the need to rethink our approaches to agriculture. In bio-dynamic farming and gardening no chemical fertilizers or synthetic pesticides are used. Organic matter is used to rejuvenate the soil and composting and crop rotation are integral to the process.

After their studies with Chadwick, the Sullivans attended Emerson College, England, focusing on bio-dynamic agriculture. They were working in a garden in North Carolina when they heard of the families in Pennsylvania. The Sullivan's goal had always been to operate a bio-dynamic garden and for them community-supported agriculture seemed the perfect approach, because their interest lay in gardening, rather than in sales. In other situations they had experienced, the would-be gardeners ended up spending a disproportionate amount of their time marketing the produce



Top left: Broccoli seedlings in a shade house. **Bottom left:** Barbara and Kerry Sullivan plan the entire crop and harvest for 160 families in Chester County. **Right:** Kerry Sullivan orchestrates moving the potato harvest into baskets. The fifth graders work hard to keep them filled.

to restaurants and health-food stores. In Kimberton, Chester County, it seemed there was a group of families eager to purchase organic produce and a farm co-op willing to provide a lease on 10 acres and some manure.

planting

That first year was rough. Barbara and Kerry arrived in February with the families expecting there would be vegetables to harvest by mid-May. Such was the winter of 1986-'87 that they couldn't erect the simple plastic-covered greenhouse they needed to start seedlings until March. For a couple of months they had been making lists and charts, trying to figure out how many vegetables these as yet unseen families would eat, and how faithful they would be in sticking with the twice weekly pickup schedule.

In making these lists and charts, the Sullivans used their own appetites and



eating habits as their guide to determine how much they should produce for the other families. "What surprised us at first," says Barbara, "was how few vegetables most American families consume. Today's lifestyles with both parents working leave little time for meal preparation and fresh vegetables certainly take more time to prepare."

After the first season, they cut back on the vegetable production and used some of the land to add fruits and flowers. "Tastes are changing, however," says Kerry, "and we notice some families are becoming more adventurous in the types of vegetables they will try. And they're using more and more herbs."

Careful records have helped the Sullivans produce abundant quality crops. By mid-February seedlings are popping up in styro-foam Speedling trays in the greenhouse. Throughout the season they sow more than 6,000 lettuce seedlings; Nancy (green butterhead), Sangria (red butterhead), and



Romulus (romaine) are their favorite spring and fall varieties, and Sierra (summer crisp) allows them to produce a crop through July and August. Spinach, radishes, scallions and turnips are also ready for the first distribution, which starts in mid-May. "Although there may be some produce before then," remarks Kerry, "there's not enough to make it worthwhile for everyone."

Later seedlings include 1,000 tomatoes, 300 oriental eggplants and 1,000 peppers. The Sullivans purchase many of their seeds from Johnny's Selected Seeds (Foss Hill Farm, Albion, ME 04910-9731) and Fedco Seeds (52 Mayflower Hill Drive, Waterville, ME 04901), but they're always interested in trying varieties said to have high quality taste with as much resistance to pests and diseases as possible.

As bio-dynamic growers the Sullivans' goal is to improve the health of the plant or the soil, rather than treating problems with chemicals. A huge compost pile is part of the garden and additional organic matter is

In bio-dynamic farming and gardening no chemical fertilizers or synthetic pesticides are used. Organic matter is used to rejuvenate the soil and composting and crop rotation are integral to the process.

included, with the use of cow manure from the surrounding farm. In addition, the Sullivans also sow cover crops of vetch and rye as the harvest is completed in different areas of the garden. With 10 acres, they also have the luxury, unfortunately not available to most home gardeners because of space limitations, of being able to rotate their crops. Theirs is a six-year rotation consisting of the following crops: corn; solanaceae family (eggplants, peppers, potatoes and tomatoes); vining crops (melons, watermelons, pumpkins); leafy vegetables (lettuce, arugula, spinach and

cabbage crops); root crops (carrots and turnips) and legumes (peas and beans) and one year under a cover crop. In all they grow 50-60 different crops each year.

the harvest

An invitation to take part in the harvest one day last July was an opportunity I wasn't about to refuse. Working with the Sullivans were two apprentices, Mark Ohi and Michael Shea, who worked in the garden six and a half days per week in exchange for all the vegetables they needed, a small cash allowance and housing on the farm if they could use it. "Without the apprentices," says Barbara, "we couldn't survive."

The night before, the Sullivans had picked the melons, watermelons, onions, okra, beets and peppers. At dawn we harvested lettuce, rinsed it in a horse trough, then brought in bushels and bushels of tomatoes. Later in the morning we moved to the corn plot. Never again will I grumble

continued

This Farm Cooperative Feeds 160 Families

when some ears of the corn we buy at our local vegetable stand are not fully mature. It's hard to tell what's behind that dense, fibrous cover, and it made me especially nervous when Kerry told us that corn is a very expensive crop because the production per acre is so small.

With some crops the Sullivans solve the time-consuming harvesting activities by offering the families the opportunity to "pick your own." Peas are one such crop, as are raspberries and strawberries, and anyone is welcome to cut a bouquet of flowers when they stop by to pick up their vegetables. In late summer, children from neighboring Kimberton Waldorf School come over during school hours to help with the potato harvest. Later in the fall, they invite the families to come for a "carrot dig." The Sullivans are just as interested in having people enjoy the garden as they are in producing good crops, so they're delighted when a family comes to picnic or when a member brings her lunch and sketchbook to the garden on a beautiful spring day.

Throughout their term as gardeners at Kimberton, Barbara and Kerry Sullivan have worked closely with a Core Group of approximately a dozen members, who serve as the leaders for the garden handling its financial affairs (projected expenses for 1992 — \$60,000), mailings and other administrative affairs. Core Group members estimate they spend one evening a month on these activities. Starting this year Jean Yeager will serve as the garden's director, responsible for coordination of all non-garden organizational aspects. As noted in the garden's December 1991 *Newsletter*, these organizational aspects "To date include membership and distri-

bution activities, but with the growth of the organization and possible changes in our organizational structure, this administrative work may increase quite a bit during the next year."

distribution

Distribution to members takes place on Tuesday and Friday in a farm shed a short distance from the garden, starting at 1 p.m. A member of the Core Group that oversees the garden handles the organization in the distribution shed in exchange for a free share. On the blackboard he or she will note the maximum quantity of each item per share. Should they not want their full share of any vegetable, families are asked to place it on the surplus table so it can be picked up by another family. Also on this table they find not-so-popular crops such as okra, hot peppers and herbs. Some families relish them, but not everyone wants them as part of their share. The afternoon of the day following pickup day, everything is considered surplus and can be taken from the cooler, but members are asked to take only as much as their family can use, rather than giving it to another family in their neighborhood.

The first year the garden started with 110 shares. For some families this was more vegetables than they could use and some shares were divided in half, a process neither the Core Group nor the Sullivans want to increase. For summer '91, 160 families were included in the network, but as Barbara explained, "Each additional family makes the administration more complicated so we've capped the number of half shares." For summer '92, there will be 75 full shares at \$520 each, and 70 half shares costing \$320 each. Shareholders are asked

to make a \$50 "seed money" deposit and sign an Annual Commitment Letter by mid-January, with the complete deposit due by early February.

Families come and families go, and for some their household needs for vegetables change, but overall the Sullivans look towards a bright future, and this year they plan to experiment with a couple of polyethylene tunnels to develop an earlier harvest of tomatoes and cucumbers. Also under discussion is the construction of a distribution shed in the garden, a move the Sullivans favor because it would bring the families in closer contact with them, the garden and its products.

Jane Pepper is president of the Pennsylvania Horticultural Society. She writes a weekly gardening column for the View section of the *Sunday Inquirer*.

KIMBERTON WALDORF SCHOOL (formerly Kimberton Farms School)

When the students at Kimberton Waldorf School go to class, they may be heading to the garden on Seven Stars Farm, the co-op garden run by the Sullivans. The children get their hands into the soil as early as the third grade. Time spent in the garden is all part of the lesson plan.

"It's wonderful to see what happens to a third grader in the garden," says teacher Tjitske deBoer Lehman, who also coordinates Kimberton Waldorf's work project with the farm. "A child of nine really looks at a carrot, at how much it looks like a spaceship, or like the pattern they've just completed in Form Drawing."

"The difference between third and fifth graders is enormous," she says. "The fifth graders are much more 'Okay, where's the work, let's get to it.' " The Kimberton Waldorf approach to education is built on this difference; the growth stages of childhood determine what the children learn and how they are taught.

Lehman says that what the kids learn outdoors becomes the foundation for later learning. Students work with their teachers to weed, thin carrots in their rows, and to harvest. Simple lessons emerge for the young during these first half-hour, twice weekly visits: how many potatoes are in this row, and see how this row over here doesn't have so many. By fifth grade, students may spend up to 90 minutes a week during spring and fall in the garden. In the winter, classwork continues on to other parts of Seven Stars Farm. By the eighth grade, students are moving small trees around. A social awareness also develops, "what it feels like to work together," says Lehman, as well as learning what a beet looks like before it gets canned.

Joseph Robinson



photo by Mary Lou Wolfe

(Left to right) Apprentice Mark Ohi, teachers Tjitske Lehman and Gerard LoDolche work with fifth graders to load butternut squash into a truck, then form a human chain to pass them into a winter storage shed. The finale is a trip to the raspberry patch for as many berries as the students can eat in 10 lovely minutes.

IRISES THAT REBLOOM

 by Lucy Fuchs

photos by Diana Nicholls



Iris 'Jean Guymer' reblooms in July and August.

Iris, that aristocrat of flowers, graceful and stately, comes in a wide variety of colors and sizes and there's a place for them in almost everyone's spring garden. Could we possibly add to its virtues? Yes, we can. We can have these beauties in the summer as well, blooming periodically through the fall and up until the first frost. This past fall I anticipated the freeze and cut some blooms beforehand for indoors. I had color into the first week of December and was better able to manage my regret when a sudden frost finally did in the remaining buds outside.

In my garden these reblooming (remon-tant) iris share the perennial beds with many other plants. They are good neighbors and have done quite well with only the usual watering and fertilizing. Lovely as they are in spring they are even more welcome in fall compensating for the end of the daylily season and making gorgeous

continued

Do you want irises that rebloom in summer and fall; some are now available.



'Spirit of Memphis' reblooms in September and intermittently until frost.



'Jennifer Rebecca' reblooms September, October and November.

'Immortality' reblooms at
the end of July — vigorous
rebloomer until frost.

photo by Diana Nicholls



IRISES THAT REBLOOM

companion plants to the Japanese anemones in bloom at the same time.

I have had the pleasure of the company of rebloomers for 10 years, in three gardens in as many states at opposite ends of the country. (That says something about their adaptability, although specific ones do better than others in particular locations.) Wherever I've lived, however, I could not find these iris locally, nor did I meet other gardeners who knew of them. Each time I had to order them from small nurseries out of state. Lamb Nurseries in Spokane, Washington, even ceased carrying them in time and to my shock said that there was too small a demand.

A devoted group of staunch gardening advocates and remount hybridizers are rapidly changing the picture, however. After years of experimentation and cultivation breeders have so improved their form that reblooming irises more closely equal the standards of their better known relatives. It was not always so. Ten years ago rebloomers were viewed critically by many irisarians at shows because they could not compete in form. Their flowers were said to be smaller and they did not have the subtle variations in form as the one-time bloomers. I was immune to this criticism because when in bloom in the fall there are no other iris to compare them with.

Rebloomers vary so check their performance in your area, especially if you want to plan flowering in conjunction with other perennials. Generally speaking, most have their rebloom in mid and late fall. Some even bloom sporadically through the summer and some are steadier and more prolific than others. Whenever they bloom, they are a welcome sight. In addition to asking the supplying nursery about their bloom in your area, the Reblooming Section of the Iris Society of America* is a wonderful source of information for both dirt gardeners and professionals. Their dues are a mere \$4 a year and they publish a lively and helpful newsletter. They also keep in close touch with their membership and publish lists about the sturdiest and most prolific varieties in each area. They are frank, too, about disappointing performers and endeavor to keep standards up.

cultivation

Rebloomers, vigorous growers, require

*For information or to join contact:

Mr. Howard Brookins, Pres., The Reblooming Section, Iris Society of America, P.O. Box 965, Menomonee Falls, Wisconsin 53052-0965.

The Author Recommends:

You can choose from hundreds of remount irises. These are the author's favorites, and she's grown them successfully in the Delaware Valley.

Initial bloom for spring is usually a week before the once-bloomers.

	Color	Kind	Rebloom Times	Height
'Corn Harvest'	bright yellow	tall bearded	July & intermittent until frost	32"
'Spirit of Memphis'	medium yellow	tall bearded ruffled	Sept. & intermittent until frost	34"
'Immortality'	white	tall bearded	end of July, vigorous rebloomer until frost	36"
'Jean Guymet'	pale pink	tall bearded	July & Aug.	35"
'Autumn Bugler'	purple	tall bearded	Aug., Sept., Oct.	36"
'Jennifer Rebecca'	rosy pink	tall bearded	Sept., Oct., Nov.	38"
'Baby Blessed'	yellow	standard dwarf bearded	early May almost continuously until frost	12"

generous feeding (10-10-10) unless they are in fertile soil. They grow in almost any type of soil and like other iris should be planted shallowly; you can plant in summer or fall. In clay soil the rhizomes should be slightly exposed. In sandy soil they can be covered an inch or two. Like most other tall bearded iris they appreciate good drainage. Again like other iris they have few diseases or pests, although you should be alert to the iris borer, which, if left unchecked, will badly damage a plant. Cleaning the bed of old leaves in the fall is the best preventive as it removes shelter for the iris borer eggs. The early signs of borers are a wet appearance to the leaves and some notching. Later the borers work their way down into the rhizomes where they can be cut out. Some gardeners use malathion as both a preventive and treatment. I have not found this necessary.

The other potential problem is root rot, a bacterial disease, best prevented by good drainage. It's easily identified by soft mushy areas on the rhizomes and an unpleasant odor. If not too extensive, cut the affected area away. Otherwise destroy the rhizome. A quick dip in full strength Clorox is also recommended when dividing iris. The rhizome should be dried before replanting.

Divide about every third year if they are not to become too crowded. When replanting, the experts advise either a fresh location or a generous replenishment of soil.

Reblooming Iris Sources

Check your usual catalogs. Some of the larger nurseries will be carrying remount irises this year. If you prefer, contact with nurserymen and hybridizers, as I do, I suggest smaller nurseries such as:

Aitken's Salmon Creek Gardens
608 N.W. 119th St.
Vancouver, WA 98685
(206) 573-4472

Lloyd Zurbrigg
Avon Bank Gardens
Box 5244
Durham, NC 27717
(919) 489-6960

Hall's Iris Gardens
1495 Enterprise Road
West Alexandria, OH 45381

The Iris Pond
7311 Churchill Rd.
McLean, VA 22101

Nicholls Garden
4724 Anzus Drive
Gainesville, VA 22065

André Viette
Rt. 1, Box 16
Fisherville, VA 22939
(703) 943-2315

Lucy Fuchs gardens in the best of both worlds. Bordering on a woods she grows shade plants and wildflowers, but also finds a place for growing perennials where she mixes old favorites with adventurous new ones.



You're gonna get stung," said one of the old hands at beekeeping that Jim Castallan consulted when he first considered undertaking the rescue operation. A beekeeper of considerably more enthusiasm than experience, Jim nevertheless found the Jordans' call for help in the Bowling Green area of Pennsylvania's Delaware County, to remove a colony of wild bees from a tree on their property, a rare opportunity to test his skills. So, on a sunny day in August he found himself atop a 28-foot ladder face to face with roughly 30,000 honeybees.

This particular honeybee colony was exposed to plain view. Unlike most honeybees, who resort to hollows in aged or dead trees if they are not lucky enough to live in hive boxes provided by humans, this colony was forced to set up housekeeping on the outside of a tall pine tree. It had obviously been there all summer, nestled securely where a branch met the main trunk. The seven plainly visible plump fans of comb testified to an active season of honey gathering and egg laying. Time, however, was running out for the colony as the summer waned. The notable reduction in available flowering plants, typical of late summer, and the inevitable arrival of cold weather would eventually kill off this otherwise viable colony unless someone intervened.

The challenge was not simply to remove the colony, it was to do so in a way that would save it. Honeybees are in trouble almost everywhere in the country, victims of environmental and disease problems that have gradually reduced populations to alarming levels. Such exposed hives are still uncommon, but the circumstances that forced this particular bee colony to resort to this lifestyle are becoming increasingly common in the suburbs and exurbs of the Delaware Valley and similar regions. Inexorable suburban sprawl, with its trademark housing developments, shopping centers and parking lots are destroying natural shelter and stands of wild flowers that honeybees depend on.

few homes for wild honeybees

Jim, of course, was unable to resist the challenge. He found a willing comrade in neighbor Judy Moffett, who he had recently initiated into the delights and mysteries of beekeeping. One might even say she was too inexperienced to know better. Judy

The arrival of cold weather would kill off 30,000 honeybees camped on the outside of a tree unless someone moved them. Jim Castallan decided to meet the challenge.

signed on as chief assistant. Jim's next step was to reconnoiter the site to devise a strategy. He was a pioneer in this project, none of the local beekeepers he consulted had any experience with exposed hives.

Jim theorized that the bees settled on the tree when their queen swarmed away from an established, overcrowded colony in the

The mantra for the day was "don't panic."

area. He observed that the bee population was at full strength, typical for late August. While the majority of the residents, the workers, were out desperately foraging for pollen and nectar during the sunny midday hours, a substantial guard force, greater than normal for a hive within a tree or manmade hive box, was on duty. He realized that the colony's exposure to the world probably required more than the usual complement of guards. That, however, was not good news for him.

Honeybees normally establish their homes inside the cavities of aging or derelict trees. Within that shelter they draw out their distinctive wax comb in layers with geometrically uniform hexagonal chambers for honey or pollen storage or laying eggs. Usually the egg chambers, called brood cells, are in the lower center of a sheet of comb, the food storage cells filled with honey and pollen surrounding them in a semi-circle. Once the eggs hatch, the young bees embark on a sophisticated career ladder as they age, undertaking jobs such as nurse, guard and soldier and field worker. They may specialize for short periods as water gatherers, undertakers and groomers. Most honeybees in a colony

are infertile females, a smaller proportion being males, called drones, whose duties are limited to waiting around for a queen to fly by so they can fertilize her. Otherwise useless, these hangers-on are unceremoniously expelled from the hive as winter approaches to reduce demand on the honey stores over the winter.

As more and more natural areas fall to the bulldozer, the supply of sheltered arboreal homes for honeybees is drastically reduced. The problem exists in both the older suburbs where development is virtually complete, having eliminated most open, wild areas, and in the exurbs where development races across fields and forests like a wildfire, carrying before it all old and fallen trees. Honeybees, which feel compelled to swarm from established colonies, as they often do, have real difficulty finding safe shelter. So the plight of this colony Jim would save becomes more common every day.

Having carefully evaluated the situation, Jim believed he could rescue this colony with careful planning. "I tried to anticipate every problem. If I were totally prepared, there would be less chance of an unpleasant surprise." The height was the main problem. If the unexpected occurred, improvising at 28 feet would be difficult. An emergency scramble down the ladder might be disastrous. The goal was to cut the comb (with bees milling about) off the tree trunk into a box, then get it down to the ground. He and Judy could then put the comb into wooden frames and set them into a hive body where they would be protected over the winter.

disappearing forage in the suburbs

So we gathered that sunny Sunday in August to do the deed. Jim spread a light sheet over the ground near the base of the tree and spread out his equipment. The key item was the smoker, a tin can with a lid and bellows, which holds smoldering rope or pinecones. That, in addition to his protective outfit, was Jim's best weapon against the phalanx of guard bees arrayed around the perimeter of the comb.

Honeybees are reluctant to sting, because, once injected, their stingers stay embedded in the victim. Their abdomens torn apart, the attacking bees die. Unless sorely provoked, worker bees would rather just get on with their foraging. Guard bees, however, are more prepared than workers



Top left: The external beehive, mid-day later summer. Most of the bees are away foraging. **Bottom left:** Jim Castellan prepares the smoker, which along with his clothing, is his best protection against the bees once he goes up to remove the combs. Judy Moffett assists. **Right:** Jim climbs the 28-ft. ladder to cut the comb, piece by piece, and place the pieces in the box. Judy is right behind on the initial foray.

to make the sacrifice. They are skilled at finding the smallest opening in the veil or cuff of even the most carefully dressed beekeeper.

Jim would climb the ladder, Judy would be ground-level support. Believing it's best to "measure twice and cut once," Jim carefully reviewed the plan with Judy as they set out the frames and string, and the hive box on the sheet. The mantra for the day was "don't panic."

Next to shelter, food is most important to honeybees. This colony probably chose to settle in the Jordan yard because of the proximity of the orchard. Several acres of orchard, meadow or similar undeveloped land are rarely found in the suburbs anymore. Flowering fruit trees are wonderful sources of pollen and nectar in the spring. Commercial orchards depend on the fact that, as they forage for food, honeybees inadvertently pollinate fruit crops, and they "hire" them to do this job. Gardeners are also in debt to bees for this service. They

get it free. These days, however, honeybees have trouble finding concentrations of untainted food sources in the suburbs and exurbs where, paradoxically, flowers seem to bloom in abundance.

As farms give way to communities, ideal food sources such as orchards and meadows having large expanses of wildflowers are destroyed. The flowers that gardeners plant do not necessarily replace the former sources of nectar and pollen. Cultivated flowers are not usually planted in the density that make honeybee foraging most efficient. Many do not bloom during the critical late summer period. They are unsuitable either because they have deep, inaccessible throats or they are sparsely planted. Often their pollen or nectar production, and even scent, has been adversely affected by hybridization so they are of no use to bees. Showy, double-petaled blooms desired by gardeners are less appealing to bees than single-flowered varieties. And, regrettably, the flowering plants in resi-

dential yards are often deathtraps because they have been sprayed with pesticides that cannot distinguish between honeybees and aphids or beetles.

Although the Jordans had been aware of their presence all summer, they found that the honeybees posed no problem because the hive was 25 feet high on the tree. The worker bees' comings and goings did not intrude. Honeybees usually forage at least 1/3 mile from their hive, many routinely ranging a mile or more in search of flowers. Scouts locate promising patches of flowers and signal the workers to turn their attention to the area.

Bees instinctively prefer large concentrations of the same flower to areas planted with diverse species. This "flower fidelity" assures efficient food collection for them and effective pollination for us. For this reason flowering trees and shrubs and meadows of wildflowers are among honeybee favorites. Unfortunately, suburban gardens are small and so diverse that they

continued

don't offer opportunities for flower fidelity. Though they don't effectively replace natural forage, ornamental plantings in residential gardens can collectively provide crucial food sources. They can tide honeybees over during lean times in late summer and fall when they are almost the only flowers available.

Now, late August, was just such a time. Most wildflowers were spent and food sources were drastically reduced just as it was time for the hive to brace for winter. This colony was worse off than most because they spent the weeks of strongest honey flow in the spring building honeycomb and establishing their hive in its new location. They had not been able to take full advantage of the best of times and now it was the worst of times. About the only flower available was the little white clover in the Jordan lawns and orchard. As this was the play area for numerous barefooted children, the situation became untenable for both bees and kids. It was definitely time to do something about the hive.

Jim first went up the ladder and smoked the bee-covered comb. In response to the likelihood of fire that the smoke suggests, honeybees instinctively retreat into the hive's interior and gorge themselves on honey in preparation for abandoning the hive. After a two- or three-minute wait while the bees became fat and mellow, Jim climbed the ladder to cut down the comb. His original plan called for cutting down each fan of comb individually, but the thought of climbing the ladder repeatedly was daunting. Instead he positioned a cardboard box of manageable size under the huge comb and cut it all down, piece by piece, in one operation. He called out to Judy down below, "first piece, — second piece..." as each section — bees included — fell gently into the box.

Hardly five seconds elapsed between reports. Much to Jim's surprise and delight it went off without a hitch. The entire comb was cut from the tree trunk in less than a minute. When all seven sections were cut, Jim promptly threw a light cloth over the cumbersome box to contain the thoroughly disoriented bees. Straining to balance the heavy, buzzing box, he descended triumphantly to the ground. Only when he was safely on the ground did Judy point out that the tree branch he had straddled for support was, in fact, dead.

parasitic disease decimates honeybee colonies

Also dressed to the nines in coveralls, bee veil and gloves, Judy was prepared to help with the next step, "hiving" the colony.



Jim and Judy place the combs into a wooden frame. They then place the frames into a wooden hive box that is the colony's new home.

While it may seem like a lot of trouble to save these bees, it is important to save as many viable bee colonies as possible. Nationwide, honeybees face yet another problem. Wild, commercial and hobbyist colonies are all falling victim to a parasitic disease called tracheal mites.

Accidentally imported from Europe, these microscopic mites (*Acarapis woodi*) carry on their life cycle in honeybees'

Only when he was safely on the ground did Judy point out that the tree branch he had straddled for support was, in fact, dead.

tracheas, or breathing tubes, clogging the passages for oxygen, weakening them. Its rapid spread since 1984 threatens to seriously undermine agriculture, as thousands of commercial hives die off, leaving significantly fewer bees available to pollinate crops and orchards. Honeybees in the United States have no resistance, as yet, to this parasite, so the problem is spreading virtually unchecked through honeybee populations everywhere. Losses are more severe in the North than in the South or California.

There is, as yet, no cure for this disease. During the summer months when honeybee generations are short-lived, the parasites do not seem to affect hive food production. Somehow, however, during the winter when honeybees are less active, living for longer periods in close quarters, the mites take their toll. Researchers are not yet sure how. Short of dissection, we can't detect their presence: no outward signs on bees aid a firm diagnosis. Beekeepers suspect the parasites' presence only in the spring when they find all bees dead in the hive boxes with combs still filled with honey.

Working as briskly as clumsy, sticky,

honey-coated gloves permitted, Jim and Judy inserted each piece of comb into a wooden frame and then fashioned a supporting web of twine around it. Next, they slipped each frame into the wooden hive box that would be this colony's new home. All the while, thousands of bees in various stages of confusion and exasperation milled about or hung on to the comb for dear life. Some landed on their coveralls, but Jim and Judy moved slowly and deliberately, taking care not to accidentally crush or otherwise anger the strays. Fortunately, throughout these ministrations, the bees never panicked. Nor did their rescuers. "They were so cooperative, it was almost as if they wanted to be saved," Jim reflected afterward.

After they installed all the pieces of comb in the hive box, Jim decided that he had to go up in the tree one more time. Neither he nor Judy had spotted the queen, and he wanted to be sure that she was not still in the tree, hanging on to the remnants of the comb. If she was, the captured colony would be doomed, even if they were safely sheltered, because they could not replace her and all the eggs she would lay in time for winter. This time, along with the smoker and the cardboard carton he took a brush up the ladder. He lightly smoked the remnant honeybees, then gently brushed them into the box, covered it and descended once again. He then unceremoniously dumped them and other assorted malingerers into the hive box and secured its lid.

Jim left the hive box under the tree overnight and returned the next day to find everyone, including the queen, settled in. He took the new tenants home to join the five other hives in his backyard. Earlier in the season he had hived a swarm that had never quite caught on, so he decided to combine it with this new colony of determined survivors to their mutual benefit. Of course, disease was a concern, and he could

send some of the honeybees to Penn State for tests to be sure that the colony was not infected with tracheal mites.

Instead Jim decided to treat this new colony, as he does all his hives, with menthol crystals in the fall after he harvests a portion of their honey for himself. These crystals vaporize at about 70° causing a smell that "drives tracheal mites crazy." Over a 20-day period, the typical life span of a honeybee at this season, this treatment rids an entire hive of any parasites. The hope is that future generations in this new hive will thrive and buy time in the effort of honeybee colonies everywhere to develop natural resistance to this menacing disease.

Learn More About Honeybees —

Books

ABC and XYZ of Bee Culture 40th edition. Roger A. Morse, ed., A.I. Root Company, 1970.

Bees: Their Vision, Chemical Senses and Language. Karl von Krisch, Cornell Paperbacks, 1971.

Hive Management, A Season Guide for Beekeepers. Richard E. Bonney, Garden Way Publishing, 1990.

Fundamentals of Bee Keeping. Clarence H. Collison, Pennsylvania State University College of Agriculture.

Magazine

Gleanings in Bee Culture. A.I. Root Company, 623 W. Liberty Street, Medina, Ohio 44256.

Plants for Honeybees

For a list of plants (trees and flowers) that attract honeybees, send \$1.00 and a business-sized SASE to:

Plant List
New Response, Inc.
Box 338
Springfield, PA 19064

Liz Ball is a horticultural photographer and writer who frequently contributes to *Green Scene*. She and her husband, Jeff, live in Springfield, Delaware County, where they write, garden and give workshops. Their latest book *Yardening* has just been published by Macmillan.

Jim Castellan, beekeeper and hero of our story lives with his wife, young son and five bee hives in Rose Valley. A director of personnel systems at SmithKline Beecham, he is a member of the Chester County Bee Association.

Twenty Ways to Help Preserve Honeybee Habitats

Individually as gardeners and homeowners, and collectively as community residents we can help preserve honeybee habitats.

1. Set aside certain areas in parks and in public and private undeveloped areas where aging or dying trees are allowed to stand so they can provide shelter for wild honeybee colonies and other wild animals.

2. Plant flowering trees in yards and public spaces. Replace fallen shade trees with species that have flowers honeybees favor.

3. Plant flowering shrubs in yards and parks, school grounds, golf courses and along roadsides and median strips.

4. Plant flowers and flowering ground-covers instead of lawns. Devote sections of existing lawns in cemeteries, golf courses, parks, school grounds and roadsides to clover, vetches and similar plants.

5. Plant brambles in undeveloped areas, median strips, along roadsides and as hedges. Their flowers attract honeybees.

6. Set aside sections of parks, golf courses, cemeteries, empty fields and roadsides for extensive wildflower plantings.

7. Ask municipal governments to enact zoning requiring developers to allot a certain percentage of their land to wild growth.

8. Deliberately choose some flowers that are not hybrids to use as ornamental plantings around the yard.

9. Plant flowers in masses to take advantage of honeybees' flower fidelity.

10. Choose flowering plants, such as narcissus, rock cress, forget-me-not, dahlia, coreopsis, blanket flowers, black-eyed susan, sunflower, cosmos and others that collectively provide both pollen and nectar for foraging bees.

11. Plant flowers that bloom late in the summer and in the fall, such as bellflowers, chrysanthemum, goldenrod, asters, sedums, and others to augment honeybee food supplies during these relatively lean times.

12. Avoid routine preventive spraying of pesticides in yards and in public areas. Limit pesticide use to specific, identified problems on specific affected plants.

13. Use pesticides late in day when foraging honeybees are back in the hive. After about 3:00 p.m. is best.

14. Wherever possible use soaps, oils, bacilli (such as Bt) and neem to control pest problems. Avoid broad spectrum insecticides that kill any insects they contact. Honeybees are equally at risk from "organic" compounds such as rotenone and pyrethrum as they are from synthetic ones like carbaryl and malathion.

15. Plant backyard orchards because fruit blossoms are honeybee favorites. The new micro-dwarf fruit trees are ideal for small yards and containers.

16. Let some of your vegetable crops "go to seed." If they are allowed to flower, brassicas like broccoli, Brussels sprouts, and cabbage offer food in cooler early and late seasons when flowers are in short supply for foraging. Chicory, endive, asparagus, globe artichokes, alliums (onions) of all kinds support honeybees.

17. Plant flowering vegetables — squash, melons, scarlet runner beans, cucumbers, fava beans (most other beans don't attract bees), and Jerusalem artichokes — that attract honeybees.

18. Plant herbs and allow some to flower freely. While catnip is the #1 bee favorite, they also love mint, chive, sweet basil, rue, and borage blooms.

19. Learn to distinguish honeybees from other stinging insects such as hornets and wasps. Watch them foraging in your garden and enjoy the single-minded intensity with which they work.

20. Teach your children and encourage school programs about honeybees so that they will be respected and protected in your yard and community.

Bee Colonies in United States

In 1945: approx. 5,460 (x 1000) colonies;
1965: 4,718 (x 1000) colonies;
1985: 4,325 (x 1000) colonies;
1990: 3,188 (x 1000) colonies.

At the 1992 Farm Show in Harrisburg, suburban Pennsylvania beekeepers won 24 of 108 awards in competitions over apiary products such as beeswax, honey.

Pennsylvania beekeepers have an estimated 41,000 colonies kept by 20,000 people (all but 50 or so being hobbyists).



Prepare a Five-Year Plan for Your Garden

 by Todd R. Phillippi

When money is tight, we tend to put off or scale down plans to start new garden projects. Such scaling back, however, can leave gardening addicts like me feeling frustrated. Rather than shelve garden dreams, I suggest a five-year plan. Such a plan involves first designing the garden you want, then planning the steps to achieve the design over the five years. It's a good method not only for do-it-yourself gardeners, but also for people who want a garden-like setting, yet who want to spend only a fixed amount annually.

For me, the most exciting part of such a project is the dream phase. I bypass financial and practical considerations to focus on what my family would really like to have. Out of this dreaming come the grand ideas that form the framework for a design. The bulk of the work then becomes the staging of the grand ideas on the property. At this point I begin to evaluate the property's limitations and to bring the design in line with reality. Although we might never have enough money to realize some grand dreams, even if the work could be phased over 20 years, often we can approximate them using ingenuity, patience, hard work and a willingness to compromise and substitute.

After looking realistically at financial constraints and any dreams that the nature of our property rules out, we also consider the possibility of any future additions or needs that are likely to arise over time. That could mean we'd want to construct an addition, add a swimming pool, or adapt to a change in family size. By accounting for these possibilities in a design, we can avoid tearing up our labor or having to work around it to accommodate future changes.

Once we have in mind the garden we want to create, we break the work up into five equal or slightly decreasing phases of labor and expense. We establish an annual budget of resources that makes the overall project manageable. Five years is actually somewhat arbitrary, but it is important to plan when the work will be completed so

the task won't seem too monumental to achieve.

For some people, a five-year approach might simply involve dividing up the property into five areas and doing them consecutively over time. The problem with this approach is that you may have to wait several years before you can even begin to enjoy your back yard if you put your money in the front and sides first. Usually it costs more in the long run to do area phasing, because you can get a better price by doing some work all at once. For example, it may cost a third less to have an electrician wire in light circuits for both front and back yards rather than to have him return next year to do the back.

If you bear in mind that the thrust of the plan is to choose a logical sequence of events to perform the work, here are some guidelines to use to order specific tasks:

Address major problems that could interfere with the plan: The problems that should be addressed first are not always the most obvious ones, e.g. a cracking driveway; for planning purposes it might be better to leave it that way until heavy equipment work has been completed. Instead, tackle areas which left unaddressed would maintain an unsightly impression (for example, shrubs that have grown to completely block windows), or problems that could cause damage to completed work, such as a dying tree that can drop limbs on newly planted shrubs.

Satisfy pressing desires: First provide for amenities essential to the enjoyment of your property. Depending on your lifestyle, this could be a patio for barbecues or for those obsessed like me, at least one perennial border offering a chance to do some real gardening.

Plan for growth: A good rule of thumb is to plant any new trees in the first or second year. This enables you to buy more smaller, less expensive trees. The early planting allows the time required for the trees to produce the substantial shade essential for

surrounding plants such as rhododendrons or hosta. If coniferous trees are being planted for screening, you will need several years for them to fill in solidly.

Plan for multiplication: Most perennials can be divided after a few years, substantially increasing stock. These divisions can then be used to plant other areas.

Consider maintenance requirements: Each completed phase of work typically produces some new maintenance requirements for the successive years. That is why the phases of work should decrease somewhat each year, to allow some time to maintain the work already in place. A good plan often dictates installing high-maintenance features last, such as a bed of hybrid tea roses. Installing a sprinkler or irrigation system will save lots of watering time.

Don't work over work: Use common sense. Don't install a combination bed with border plants, only to trample over them in successive years when planting trees and shrubs. Remember also the damage heavy equipment can cause when needed for future work such as a pool or architectural addition. Such potential damage often dictates living with a cracked driveway or delaying the installation of a brick wall. Often a walk can be temporarily constructed of decorative gravel as a temporary measure. Later when the danger of damage has passed, the gravel will provide an excellent base on which to install the walk.

Consider the probability of future needs for utilities for lighting, irrigation systems, or even a connection to public sewers. Carefully plan these utility routes to prevent trenching through a completed work area; one way to accommodate them is to put conduits in place early on.

First things last: Often we're tempted to turn the weed-infested, spindly grass patch into a thick and lush lawn. The problem is that almost any work we do will cause traffic over areas of the lawn, destroying our efforts shortly after we've begun to see



Year 5: The Grand Dream Completed

genuine improvement. Remember a rich lawn is not a garden, rather it can be a real enhancement to a garden.

Keep a long-term perspective: By the end of the fifth year, our focus has shifted from creating to maintaining and enhancing. Trees and improvements completed the first year or two now seem as though they've always been a part of the property. Now is the time to take a step back to see how far we've come over the last five years. The sense of accomplishment makes maintenance a much more delightful task. It also combats the typical gardener's malady of focusing on the "yet to be done." After laboring long and hard to implement the five-year plan, let's not neglect to take time to smell the roses we've planted, instead of just noticing that the plant has black-spot!



Above: Rendering of the front as it should appear after the fifth year: trees planted the first year become well developed and the pear tree has been trained into a fan pattern; office addition appears at side of house with a "Cottage Garden" border in front; driveway and walks are now completed, since heavy equipment needed to build addition has finished its work.

At left: The plan for year five (the grand dream): Our eventual goal and therefore the real starting point for the design. Both wishes (such as the pool) and possibilities (an addition for an in-law's suite) are shown here. Other parts of the work are shown completed, including the pond and deck, mixed beds and borders, ground-covers in shady areas, and driveway and walk paving.

continued

In the Beginning . . .

photos by James W. Ingalls



renderings by R.W. Lichtenwalner, Jr.

Before Work Began . . .

Front view of the Robert Nelson House (circa 1848). The house had been vacant for several years when we moved there in January, 1991. A large dying maple (foreground), clusters of choke cherry trees, masses of forsythia and an overgrown

boxwood foundation planting had to be removed or pruned. The street trees were also dying, having grown into the overhead electrical lines (we could see the electricity arcing through the branches whenever it rained).

Plan view of the property layout in January, 1991.

Phase Two: Nine Months Later . . .



Plan, August '91.

August 1991: Nine months after move in.

- Removed dying or unsightly trees and shrubs.
- Pruned or transplanted overgrown boxwoods.
- Excavated front walk and parking area and filled with crushed redstone as a temporary surface.
- Constructed a curved dry-stone wall to work with the eventual radius of the circular drive.
- Temporarily installed some plants brought

from our previous garden in front of the wall in the soft soil that was left when the forsythias were removed.

- Planted several small trees, including a threadleaf Japanese maple (*Acer palmatum* 'Crimson Queen'), a full moon maple (*Acer japonicum* 'Aconitifolium'), a weeping Alaska cypress (*Chamaecyparis nootkatensis* 'Pendula'), as well as starting an espaliered pear (*Pyrus communis* 'Bartlett') against the south facing side wall.



photo by James W. Ingalls

The Rose Garden From First Year to Fifth

View of area becoming formal rose garden after **first year**:

- Soils from front parking area excavation moved here to form a level terrace. Chippings from tree removals are spread over the built-up area to prevent soil erosion and to use area for outdoor eating and relaxing until a deck is built. As the chippings decompose, they add nutrients to the soil for the roses to be planted the next year.
- Boxwoods from side of house were transplanted and pruned to form the hedge, which will define the limit of the rose garden and accent a 175+ year old specimen boxwood (*Buxus sempervirens* 'Suffruticosa') that existed on the property.



renderings by R. W. Lichtenwalner, Jr.

Rendering of the rose garden and pond as it should look after the **fifth year**.

Plan Layout for Year Three

- An office added off the side of the house; an additional gravel parking area in front.
- Behind the office and house, the rose garden is completed and the pond work has begun.
- New shrubs have been added and some planting beds started.
- Plantings started to screen future pool for privacy.

And on to the grand dream's fifth year!



Todd R. Phillippi, AIA, is a garden designer, architect, lecturer, and avid gardener. His previous garden in Philadelphia was constructed according to a five-year plan and won first place in the City Gardens Contest in its sixth year.

HORTICULTURAL SPRAY OILS:

A Safer Way to Control Pests?

 by V. Bruce Steward

photos by V. Bruce Steward, Longwood Gardens

The term "biorational pesticide" describes pest control products that have negligible effects on humans and the surrounding environment. Savvy companies will continue to develop biorational pesticides as the public's demand for effective and environmentally safe pest controls increases. For example, Merck & Co. produces Avid, an insecticide/miticide derived from a naturally occurring soil microorganism. Grace Sierra Crop Protection Company markets Margosan-O, an insecticide produced from an extract of the neem tree, *Azadirachta indica*, which grows in many parts of Asia, Africa, India, and the Americas. M-One, a bacteria that kills certain beetles after ingestion, is sold by the Mycogen Corp.

Horticultural spray oil, not a new pest control product, has received a lot of attention recently because it is a biorational pesticide. The use of petroleum products as a pesticide dates back to the first century A.D. In the past, horticultural spray oils were recommended for use only on dormant plants. New refining techniques have now made oils safe to use for insect and mite control on actively growing plants. Horticultural spray oils that are labeled for use during the growing and dormant seasons are often called superior or summer oil sprays (SOS). The use of these products has been increasingly studied and favorable results documented when they were tested on ornamental trees and shrubs.

Even though SOS have been shown to be safe on actively growing plants and to efficiently control a number of landscape pests, many people won't use SOS on their plants during the growing season.

Here are answers to some of the more commonly asked questions about SOS:

What are the differences between SOS and dormant spray oil?

Both of these horticultural oil sprays are petroleum-based. They differ, however, in two ways: First, the SOS are highly refined,

i.e., a large proportion of the impurities has been removed from the oil that are responsible for defoliation, leaf burn, and other damage. On the SOS label, a measure of the oils' refinement is given as Unsulfonated Residue (UR). The UR specification should be in the 92-99% range, indicating the SOS is comprised of a maximum of 1-8% impurities. Second, SOS are generally distilled at lower midpoint temperatures and have narrower temperature ranges than dormant oils. These differences in distillation allow SOS to provide better pesticide efficiency and greater safety to the plant than dormant oils.



A magnified photograph of a hemlock woolly adelgid female and her eggs that have been sprayed with superior oil. Even though the white cottony mass excreted by the pest remains, closer examination reveals that the female and her eggs are covered with oil, ultimately resulting in the pest's death.

What pests are susceptible to SOS?

SOS effectively control a wide range of pests. They are most effective against small, soft-bodied insects such as aphids, adelgids, psyllids, mealybugs, scales, and whiteflies. Immature stages of chewing insects (primarily caterpillars, sawflies, and leaf-feeding beetles), lacebugs, and certain plant bugs and leafhoppers can also be controlled with some success.

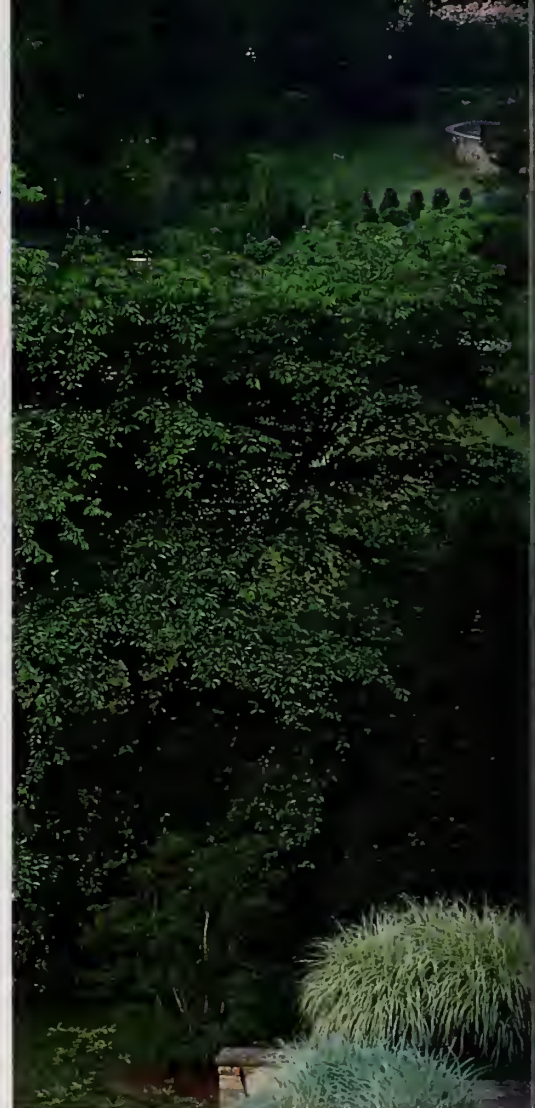
What plants tolerate SOS?

Several research studies show SOS have

a great margin of safety to many landscape ornamental plants. It's probably easier to list plants that should not be sprayed or should be sprayed at a reduced rate. Dr. John Davidson from the University of Maryland indicates that blackberries, raspberries, blue spruce (removes blue color), Koster spruce, and walnut should **not** be sprayed with SOS. He also recommends that when treating Japanese red maple, amur maple, or dwarf Alberta spruce, the spray dosage of SOS be reduced to 1% (2.5 tbsps./gallon of water).

When should you apply SOS?

Use SOS for summer or dormant applications, unlike dormant oils, which cannot be used during the growing season. Most labels recommend that you apply SOS when temperatures are between 40-85°F, and the plant is not under moisture stress. Scientific studies performed at Cornell University, Ithaca, N.Y., and at University of Maryland, College Park, Md., show, however, that SOS can be used without injury down to 20°F and to more than 90°F on a wide range of landscape plants. Researchers at Maryland also found that





Superior oil sprays (SOS) can be used on a variety of plants in the landscape during both the growing and dormant season to control a wide range of insect and mite pests. Entomologist V. Bruce Steward, Integrated Pest Management coordinator at Longwood Gardens, has incorporated SOS into Longwood's spray program.

shade trees experiencing moisture stress and treated with oil were not damaged. The studies do not suggest treating shade trees with oil during extremely low or high temperatures or during drought stress, but the research indicates that shade trees have a high degree of tolerance for SOS.

Applying SOS on warm, sunny, low-humidity days reduces the chance of a phytotoxic (poisonous to plants) response. In general, the higher the temperature, the faster the SOS evaporates, with less damage to the plant. If applied on a humid, cloudy day the SOS could cause the plant's stomates to remain closed for an extended period of time and prevent the plant from breathing (transpiring). Preferably, apply SOS as early in the day as possible before temperatures become too hot or several hours before nightfall after temperatures have fallen. Do not apply SOS when the relative humidity is greater than 70% or when it is overcast. Under good drying conditions the oil should evaporate in one to two hours.

How do SOS kill insects and mites?

SOS kill pests by blocking their breathing

tubes, causing them to smother or suffocate. SOS also reduce feeding and decrease egg laying of certain insect and mite pests.

At what rate should SOS be applied?

During the summer, SOS are normally applied as a 2% solution (2 gal/100 gallons of water or 5 tbsp./gallon of water) against most pests attacking landscape plants. Some university studies have shown that a 1% solution can be as effective as a 2% solution on certain pests. The application rate during the dormant season is usually 3 gallons of SOS per 100 gallons of dilute spray (7.5 tbsp./gallon of water).

Where can you buy SOS and how much do they cost?

Two oil refining companies produce SOS: Sun Refining and Marketing Company (a wholesaler), and Exxon. Agricultural companies, however, repackage the Sun Refining and Marketing Company material and sell it under brand names, such as Agway Spray Oil, Scalecide, Volck Spray Oil and Sunspray Ultra-Fine. Many different names are developed for the same product, but usually the product contains

the words superior or summer oil spray.

SOS usually cost around \$8 per quart, which makes a total of 13 gallons of 2% dilute spray.

How will I know for sure SOS will not damage my actively growing plant(s)?

Test **any** new pesticide on a few plants before applying it to an entire planting. Before using SOS on a wide scale, spray the recommended rate according to label instructions on a few plants or different varieties at the hottest time of the day. Evaluate the plants for approximately five days before you decide whether to treat all plants with the material.

You would be wise to test SOS on specific ornamental plants before they develop pest problems. Study the plant's response to SOS early, so you will know if plant sensitivity is a problem, before pests appear.

What are the advantages of using SOS over conventional pesticides?

SOS, as pointed out earlier, are relatively non-toxic to humans, an important plus to the applicator. Currently, no requirements

for protective clothing or equipment are listed on the SOS labels. Even though SOS are relatively harmless to humans, avoid getting them on you as they can cause skin and eye irritation. SOS do not pose the same negative environmental hazards that many conventional pesticides do. SOS dissipate quickly and have a short residual effect, thus allowing beneficial insects to move back into the treated area soon after application. Also, because SOS act physically to smother the insect or mite, instead of biochemically like most conventional pesticides, resistance to this product is unlikely to occur.

What are the most important considerations when using SOS?

The considerations for using SOS are not unique to just this material but should be kept in mind when making any type of pesticide treatment.

To control pests effectively it is essential to cover them thoroughly. Learning the biology and behaviors of the common pests that attack plants in your landscape will enable you to apply sprays more effectively. Know where the pest is located on the plant (top or underneath side of leaf, on stems, new growth, etc.) to properly direct the sprays. Timing sprays is critical when using SOS, as it is when using any pesticide. Most insects have periods in their life cycle when they are more vulnerable to treatment.

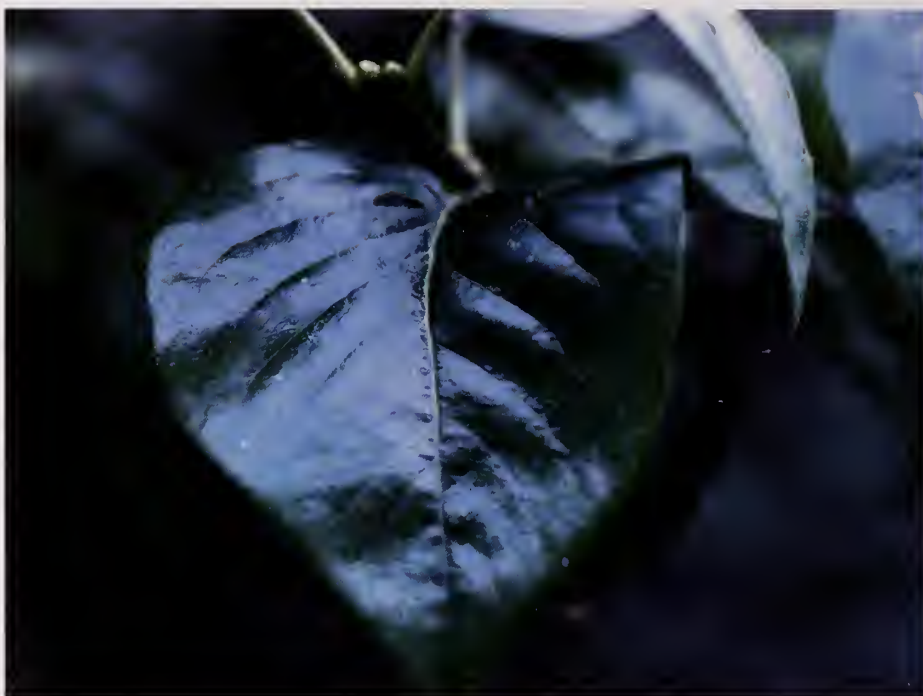
Before using any tank to apply SOS, be sure it has been thoroughly rinsed, especially if a fungicide containing sulfur was used. Rinse thoroughly any sprayer before placing pesticide in it. SOS could bind with products in the tank and possibly damage the plant when applied.

Good agitation is imperative when using SOS. If using a hand-held sprayer, be sure to agitate frequently. For larger sprayers it is essential that the agitator works properly.

Some Superior or Summer Oil Sprays May Be Used for Vegetables and Small Fruits in the Garden

Check labels on SOS products at your local garden supply center for uses with plants other than ornamentals. Some SOS products have been cleared to use with asparagus, beets, corn, cucurbits, peppers, radishes, squash and tomatoes against aphids, mites, beetle larvae, leafminers, certain caterpillars, leafhoppers and whitefly. Labels spell out when and how much to apply.

Some SOS products have also been cleared for use with blueberries against thrips, mites, sawfly eggs and scales; strawberries against aphids and mites; and grapes against mealybugs.



In addition to controlling powdery mildew on lilacs at Longwood Gardens, superior oil sprays also give lilac leaves a shiny, glossy appearance. (Note: not indicated for this use on product label.)

To mix, add the oil to the water in the spray tank. The mixture should look like skim milk.

How often can SOS be applied?

Research has shown that trees and shrubs can take a number of treatments throughout the year. Some studies have applied more than four applications in one year with no adverse effects on the plants; however, do not apply before two-week intervals.

Are there other uses for SOS?

For the past two years at Longwood Gardens, we have been testing the effectiveness of a 2% SOS solution on lilacs and zinnias for the control of powdery mildew. Although the solution is not labeled specifically for this use, SOS have effectively suppressed this disease on these plants. In addition to controlling the powdery mildew, SOS gives lilac leaves a glossy, dark green appearance.

I hope I've answered some of your questions about SOS and that you will use them in your landscape this year in place of more conventional pesticides. As the number of conventional pesticides become fewer and more expensive, as insect and mite resistance increases to conventional pesticides, and as concern for the environmental effects of pesticides magnifies, SOS will probably become an increasingly important component of pest management in the landscape.

V. Bruce Steward Ph.D. is the Integrated Pest Management Coordinator for Longwood Gardens. Bruce obtained his doctorate degree in entomology from the University of Arkansas.

Mixing Directions For Using Superior Oil Sprays:*

Make sure the spray equipment to be used is clean, dry and odor free.

1. Fill the spray tank or bottle 3/4 full with water.
2. **Shake the container of oil vigorously before measuring out the desired amount.** Add the appropriate amount of oil to the water and shake.
3. Fill the remaining 1/4 of the spray tank or bottle with water and shake again. The solution should look milky. If it doesn't, do not use it.
4. During application shake the solution frequently. Do not apply to plants if the solution has been sitting for more than 10 minutes without shaking it before resuming application.
5. Do not premix oil and water. Mix just enough for the immediate use.
6. 2 tablespoons = 1 fluid ounce.
4 tablespoons = 1/4 cup = 2 fluid ounces.

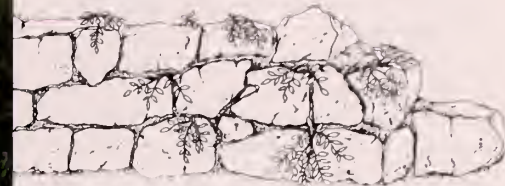
***Always consult the mixing directions on the specific label of the SOS you plan to use.** The directions listed here are taken from the SunSpray Ultra-Fine Spray Oil label (EPA Reg. No. 862-23), Sun Refining and Marketing Company, Ten Penn Center, 1801 Market Street, Philadelphia, PA.

THE ROCK WALL GARDEN



by Judy McKeon

photo by Robert Gutowski



I don't know when I first realized that plants nestled in rock crevices provide a pleasing organic beauty. It may have been on a summer visit to the Dingle Peninsula in western Ireland where I saw patches of carmine heather and yellow gorse in bloom on rock outcroppings. Plants grown on the vertical, draped over stone offer a unique view of foliage and flowers, different from the level border. I do know that I was struck with the gardener's desire to imitate nature's rock gardens, to create a home for alpine and mountain plants.

By the time I began tending the rock wall garden at the Morris Arboretum of the University of Pennsylvania in 1984, the fever had taken hold. All manner of plants had to be tried in the dry wall garden. Originally planted in the 1920s, the six-foot-high retaining wall was set into a hillside as a terracing device. The wall encloses the formal rose garden and provides over 2,500 square feet of rock garden.

Crafted from local Wissahickon schist, the dry wall was constructed stone on stone without mortar, using a soil fill. The wall is wider at the base and tapers to the top; stones are angled against the retaining soil to prevent washing. Cross or tie stones run from back to front, the height of the wall for added stability. Well situated and well designed, with a sunny southern exposure, well-drained soil, and cool planting pockets between the rocks, the wall and area simulates conditions in mountain habitats. In this environment, alpenes and mountain species will thrive.

continued

photo by Judy McKeon



Above: Pure white masses of *Iberis sempervirens*, *Phlox subulata* and golden *Aurinia saxatilis* clock the rock wall garden at the Morris Arboretum of the University of Pennsylvania in April.

Below: Billowing masses of rosy-purple *Thymus serpyllum* and pure white flowers of *Iberis sempervirens* in bloom in the rock wall garden in early May.

planting design

To achieve a simple kind of organic beauty in the massive wall garden, large sweeps of selected rock species are displayed in naturalistic drifts. At the Morris Arboretum we follow the advice of English garden writer Gertrude Jekyll and maintain a simple design by encouraging and massing only a few showy plant combinations in each season. The repeated patterns of color and texture of dominant plant groups offer a pleasing display.

When viewed from a distance, many of the common mountain species including *Aurinia saxatilis*, *Alyssum montanum*, *Cerastium tomentosum*, and *Iberis sempervirens* provide a showy floral display in spring and make a strong textural statement with their silver or dark evergreen foliage in other seasons. *Dianthus*, *Campanula*, and *Geranium* species, miniature roses and many herbs offer early summer color. From summer on, repeated drifts of gray foliage plants including *Santolina*, *Helianthemum*, and *Artemisia* species provide soft silvery textures that act as visual anchors and hold the design together through autumn. Two reliable summer companions in the wall are *Coreopsis verticillata* 'Moonbeam,' which combines nicely with the cornflower blue *Cerastium plumbaginoides*. Several species of *Aster* and *Chrysanthemum* give showy bursts of color in autumn. Annual *Zinnia angustifolia* or *Tagetes tenuifolia* supplement the summer and fall perennials.

Here and there an odd beauty can be tucked into a planting pocket in the wall to be discovered by visitors examining the wall garden close up. Then small treasures like the ephemeral *Anemone pulsatilla* with one chalice-like purple flower, the miniature white star flowers of *Arabis*

sturtii, or the pale yellow snap dragon flower of *Asarina procumbens* delight the wall garden explorer. Both staff and visitors alike delight in exploring the wall garden, observing plants at eye-level and enjoying their color and fragrance.

showy perennials for the sunny wall

Aurinia saxatilis. This common, even humble plant known as basket-of-gold or perennial alyssum, produces trusses of golden flowers in April. The cultivar 'Compacta' is smaller-leaved, and 'Citrina' produces pale yellow flowers about a week later. At the Morris Arboretum we shear all alyssums after the spring bloom in late May, which prevents legginess and provides more space for planting annuals. The alys-

sum foliage resembles stocks for the remainder of the season, providing bunches of silver-gray leaves to contrast and accent flowering plants in the wall garden. *Alyssum montanum* is similar but with tiny leaves.

Iberis sempervirens. Evergreen candytuft is the most long-lived plant in the wall. A small evergreen shrub with narrow dark green leaves, it's attractive in all seasons. Masses of white flowers cover the plants in late April. Shear after spring bloom to maintain compact habit. The cultivar 'Autumn Snow' repeats its bloom in October.

Cerastium tomentosum. Snow-in-summer hangs in sheets covering the rocks with a mat of tiny silver foliage. White star flowers are lavishly produced in early May. Shear after bloom.

22



Bright pink flowers of *Dianthus deltooides* 'Microchip' bloom in late May in the wall garden. One of the many *Dianthus* species easily grown in the sunny rock wall.



September bloom in the rock wall garden at the Morris Arboretum from the oval steps. Repeating masses of



Fragrant *Dianthus superbus* var. *longicalycinus* blooms in the wall garden from July to frost if deadheaded.

Ceratostigma plumbaginoides. A rampant ground cover, plumbago produces corn-flower blue flowers from mid-summer until frost. The shiny green foliage turns red in fall. While a full sun plant, it also thrives in deep shade.

Chrysanthemum weyrichii 'White Bomb.' As a ground cover or creeper *Chrysanthemum* 'White Bomb' produces masses of white daisy flowers with a yellow center in mid-September. It is long-lived and requires no pinching to maintain compact habit.

Santolina chamaecyparissus. Lavender cotton is a shrubby herb with tiny silver aromatic leaves. Shear in early spring and again in July. Santolina becomes woody and requires replanting every few years.

Helianthemum nummularium. An ever-

green sub-shrub with narrow silver or gray/green leaves, sun rose produces pink, red, or yellow flowers in early June. Shear after bloom to maintain compact habit. 'Wisley Pink' and 'Wisley Primrose' boast clear single flowers and excellent gray foliage.

new plantings in the wall garden

We continue to experiment with new plantings in the wall garden. Morris Arboretum staff often suggest plants for the wall or collect seed or plants on trips. Morris Arboretum director Paul Meyer collected seed of *Chrysanthemum indicum* and *Dianthus superbus longicalycinus* on rock outcroppings overlooking the Yellow Sea in Korea in 1984. Well adapted to the

continued

photos by Judy McKeon



edum 'Autumn Joy' and *Salvia farinacea* 'Victoria' crown the wall. Bright Marigold 'Lemon Gem' highlights silver foliage plants.

wall garden environment, both species are permanently maintained for the welcome color each brings.

Mother chrysanthemum (*C. indicum*) tends to be short-lived, but it is worth replanting periodically for its colorful mass of yellow flowers in October. It's an easy plant to propagate from cuttings. The fragrant lilac pink produces attractive lacy flowers in early July with repeat blooms until frost if deadheaded. *Dianthus superbus* v. *longicalycinus* is short-lived, but self-sows quite readily in the wall garden and also comes easily from seed or cuttings.

Desirable annuals and perennials for the wall are typically grown from seed by

Morris Arboretum propagator, Shelley Dillard. We also obtain perennial cell packs and liners from specialty nurseries. Divisions of larger plants can also be used if they are pared down to a manageable size. Last spring we dug *Coreopsis* 'Moonbeam' from another garden area and divided it into two-inch clumps. Once properly planted in the wall the divisions established quite readily.

planting in an established wall

Over the years Morris Arboretum wall garden volunteer Gina Hart and I have come up with methods of planting the established wall that generally work well for both perennials and annuals. Small plants are easy to establish in the wall. Gina and I prefer plants grown in one- to four-inch size pots. Anything larger will generally dry out.

Clay clods make an excellent packing material to hold the plants in the wall; loose soil falls out of the wall, mud dries out and is then difficult to re-wet. Before planting, dig clods of moist clay soil and collect some small rocks (1) Using an asparagus knife or slender trowel, investigate a potential planting pocket in the wall by digging in it. In a dry wall garden it is important for the plant roots to make contact with soil located behind and between rocks.

(2) Plant in pockets deep enough to hold the small plant and some clay soil packed in around it. (3) Push clods in like mortar around the plant to wedge it into its planting pocket. (4) Use small rocks to help wedge plants and clods. If the planting pocket is too deep or wide for the small plant, it can be filled with clods of moist soil and wedged into small rocks.

Always remove small plants from peat pots before planting in the wall. The dry peat acts like a wick and draws water away from the plant roots. Irrigate with a gentle spray using a hose with wand attachment or set up a sprinkler. For best results with walls in full sun, plant in spring on an overcast or wet day. Irrigate young plantings for the first season during dry periods.

maintain the wall plantings

Some of the most successful wall plants are self-sowers. *Aurinia saxatilis*, *Alyssum montanum*, the creeping snapdragon, *Asarina procumbens*, and *Corydalis lutea* are short-lived perennials that self-sow quite readily in the wall garden. These plants increase their numbers and move around in the wall and can add an interesting element of chance to the subtly changing face of the wall from year to year.

The long-lived sub-shrubs including *Iberis*, *Thymus*, and *Helianthemum*, and the

self-sowers are generally the most successful ornamental competitors in the wall. In addition, rock species including *Arabis*, *Dianthus*, *Phlox subulata*, *Geranium sanguineum* and many *Sedum* species are also tenacious wall plants. *Chrysanthemum indicum* and most of the silver foliage plants including *Chrysanthemum pacificum*, *Santolina*, and *Artemisia* species require periodic replanting.

In informal or naturalistic gardens where self-sowing is encouraged, the advice of English garden writer Reginald Farrer best applies. He wrote, "... right letting alone and right meddling are the beginning and ending of good gardening ..."

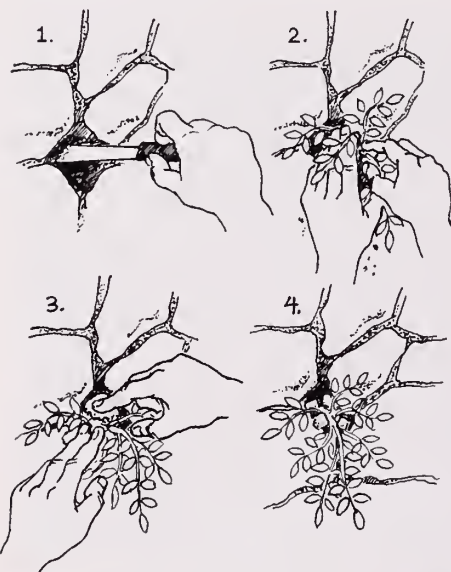
Typically gardening the wall includes familiar seasonal tasks: shear spring bloomers after flowering; pull out or prune the rampant species to keep them in bounds; selectively weed and thin to encourage self-sowers; cultivate regularly to rid the wall of weed species; and plant in spring to bulk up existing groups, add new species, and annuals. One of the advantages of gardening a six-foot-high wall is that no stooping or kneeling is required.

In informal or naturalistic gardens where self-sowing is encouraged, the advice of English garden writer Reginald Farrer best applies. He wrote, "... right letting alone and right meddling are the beginning and ending of good gardening ...". To aim for a kind of organic beauty, to instruct with plants at eye level, and to bring pleasure to visitors through seasonal displays is the legacy of the stewardship of the Morris Arboretum rock wall garden.

Plants for the Shady Wall

Anemone sylvestris
Aster divaricatus
Begonia grandis
Campanula elantines garganica
Cerastium tomentosum
Ceratostigma plumbaginoides
Corydalis lutea
Dicentra eximia
 Ferns
Heuchera americana
Heuchera micrantha 'Palace purple'
Teucrium chamaedrys

Judith C. McKeon is chief horticulturist and rosarian at the Morris Arboretum of the University of Pennsylvania.



Repeating drifts of *Sedum* 'Autumn Joy,' *Salvia guaranitica*, and *Artemisia* 'Powis Castle' on top of the rock wall.



Garden in the Shade

by Kathleen A. Mills

As landscapes mature they take on new character, creating challenges for gardeners. Simply stated, trees grow and cast their shade on ever larger portions of our gardens. I suggest this process is a blessing and not a curse. Gardening in the shade is full of possibilities.

Plant descriptions in books and catalogs always include the proper exposure for best plant growth. This is usually listed as full sun, partial shade, partial sun or full shade. Although one exposure may be ideal for a plant, often it can grow well in another exposure. We learn what we can get away with through trial and error. The plants mentioned here will, I hope, save you from error.

shade defined

Shade varies in its intensity. Shade cast by an evergreen tree is dense and year-round. Deciduous trees cast changing shade, from little to none in the winter to increasing amounts during the growing season. These factors determine what types of plants to grow. Some fully shaded sites beneath deciduous trees are ideal for planting early spring-blooming perennials and bulbs. They receive the sun needed to grow and bloom before the leaves of the tree canopy unfurl.

Dappled shade refers to woodland sunlight that penetrates gaps in the tree canopy. The aware gardener uses these patches of sun to plant partial shade-loving plants in

the midst of an otherwise heavily shaded area. *Tiarella cordifolia*, *Erythronium americanum*, and *Dicentra formosa* are among the plants that thrive in such a site.

When the sun reaches a spot for only part of each day, you have a *partial-shade* location. This occurs in a light woodland or in sections of a back yard. *Helleborus foetidus*, *Anemone apennina*, *Rodgersia podophylla* and *Mertensia virginica* are a few of the plants that flourish in these spots.

The north side of a house or fence is a *full-shade site*. Sun never reaches such a location. Some fully shaded sites lie near evergreen trees or beneath deciduous trees. Each type of full-shade site comes with a challenge; one wet, one dry.

Bogs are an example from nature of a wet, shaded site. Because the sun does not reach a full-shade site, moisture build-up can be a problem. Here use moisture-loving, shade plants like *Polygonatum multiflorum* or *Tricyrtis hirta*.

Sites under trees are shady and often dry. Many plants although shade tolerant cannot compete with tree roots for available moisture. Such areas should be planted with dry tolerant, shade plants. *Acanthus mollis*, *Alchemilla mollis*, and *Liriope* sp. can fill a dry, shady environment.

planting around trees

Tree roots are difficult to plant around. To ease planting it's tempting to raise the

continued

SHADE PLANTS

Light/Dappled Shade — Partial Shade

Name	Soil Type	Bloom Period
<i>Geranium sanguineum</i> <i>G. sylvaticum</i>	Well drained	Late spring - summer
<i>Heuchera sanguinea</i>	Moist	Late spring - summer (sporadic)
<i>Hosta</i> spp.	Moist	Summer
<i>Dicentra spectabilis</i>	Well drained	Spring
Ferns <i>Asplenium</i> spp., <i>Dryopteris</i> spp., <i>Osmunda</i> spp. and others	Moist	Not applicable

Partial to Full Shade

<i>Acatea rubra</i>	Moist	Spring flowers/ fall berries (poisonous)
<i>Astilbe x arendsii</i>	Moist	Summer
<i>Begonia grandis</i>	Moist	Late summer to fall
<i>Dicentra eximia</i>	Well drained	Summer
<i>Epimedium</i> spp.	Moist	Spring
<i>Hosta</i> spp.	Moist	Summer
<i>Ligularia dentata</i>	Moist	Summer
<i>Omphalodes cappadocica</i>	Well drained	Spring
<i>Omphalodes verna</i>	Moist	Spring
<i>Phlox divaricata</i>	Moist	Spring
<i>Polygonum bistorta</i>	Moist	Early summer
<i>Pulmonaria</i> spp.	Moist	Spring
<i>Saxifraga x urbium</i>	Moist	Spring
<i>Shortia galacifolia</i>	Moist	Early summer
<i>Trollius europaeus</i>	Moist	Spring - summer
<i>Uvularia grandiflora</i>	Wet	Spring

Selected Books

on Shade Gardening —

(Available in the PHS library.)

The Complete Shade Gardener

George Schenk, Houghton Mifflin Co., Boston, 1984.

Natural Shade Garden

Ken Druse, Clarkson-Potter, New York, Feb. 1992.

Plants for Problem Places

Graham Rice, Christopher Helm Publishing, London, 1988.

Shade Plants for Garden & Woodland

George E. Brown, Faber & Faber, London, 1980.

Shade

soil level or run a rototiller through the area. Control the urge. Tree roots lie predominantly in the top 18 inches of soil. The addition of even a small layer of soil stops air exchange to and from the roots and can severely stress or kill a healthy tree. For trees like beech and maple, it's a fatal mistake. Rototillers rip apart thousands of root hairs, responsible for the tree's water and mineral absorption. The

energy needed to grow new roots causes the tree unnecessary stress. Try starting with small plants that can be worked into soil pockets around major roots. With careful watering they will soon take hold and grow. It may take longer, but the results will be lasting and the tree is more likely to survive.

Gardeners blessed with sun long for a shady nook to escape summer's heat, while

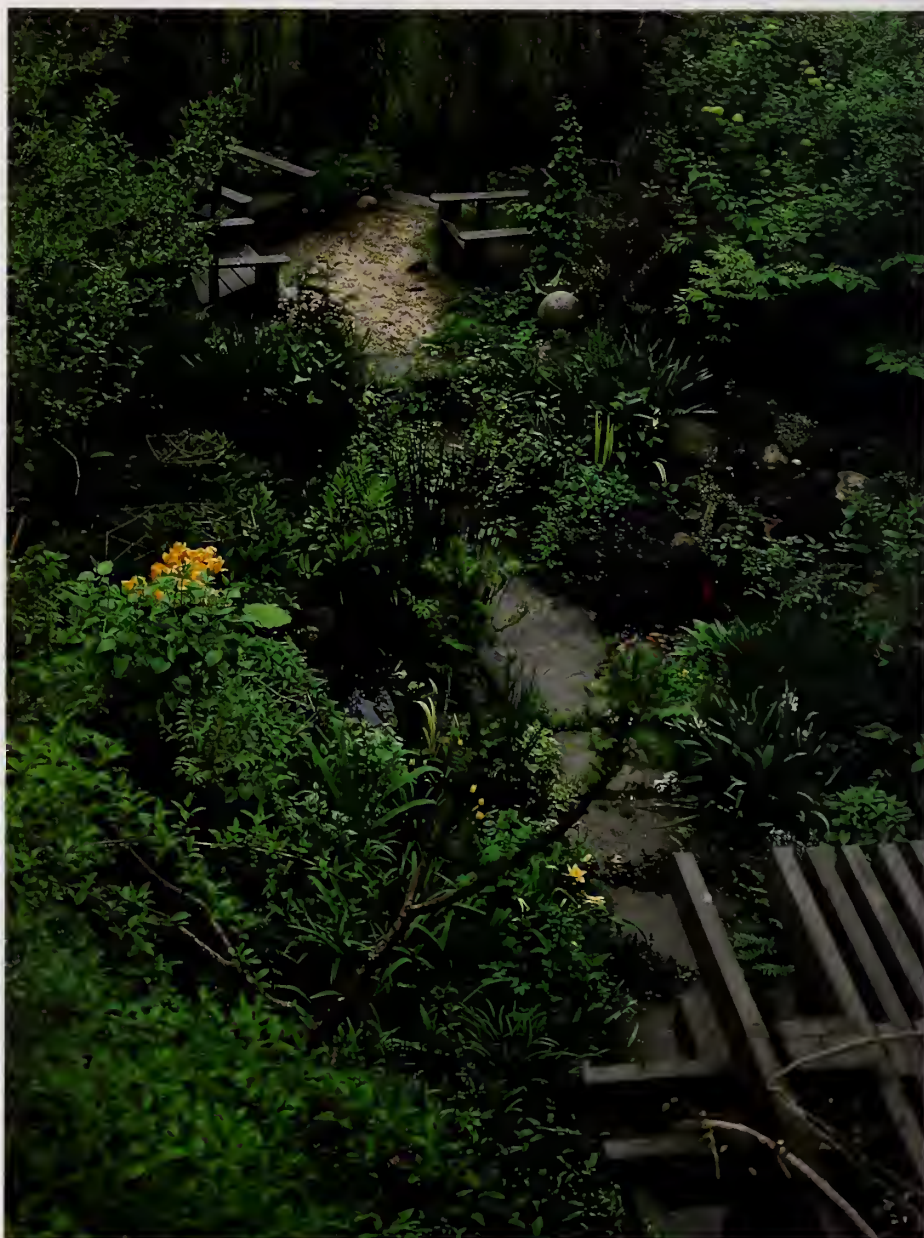
gardeners with shade dream of a sunny yard. Capitalize on what you've got. Know your garden and what makes it unique, then exploit its virtues. Shade gardens are beautiful and well worth the effort.

Kathleen Mills is a horticulturist at The Pennsylvania Horticultural Society.

A Shady Townhouse Garden

by Ken Druse

*When Ken Druse completed his acclaimed *The Natural Garden* (Clarkson Potter, New York, 1989) he thought he would never write another book. When he left his sunny garden in New York City and was plunged into a small shady garden he saw it not as a problem, but an opportunity. The fact that he loved woodland wildflowers helped. A painter friend, who gardens in similar circumstances told Ken: "Write about shade." He did and here's an excerpt about Ken Druse's own garden, just one part of his beautiful new book *The Natural Shade Garden* published by Clarkson Potter, New York, in February 1992.*



Photos: copy on p. 27 explains each photo.

This article and these photos are excerpted from: *The Natural Shade Garden* by Ken Druse. Reprinted by permission of Clarkson N. Potter, Inc. Copyright © 1992 by Ken Druse.



I moved from my sunny roof-top garden in Manhattan to a brownstone backyard in Brooklyn in 1987. When these row houses were built in the 1870s, the backyards were designed for drying clothes; the 20' x 50' lot was contained by a bluestone path surrounding the lawn. My backyard faces east. A building about a hundred feet away casts early-morning shade, and then the yard receives sun until my building's shadow begins to creep across the garden after noon. It would have a clear southern exposure, except for a tree in my neighbor's yard. They say the fabled tree that grew in Brooklyn was an *Ailanthus*, but Norway maples grow behind nearly all the houses on my block, making a miniature hardwood forest. Norway maples cast deep shade from their thick, overlapping leaves, and they also reproduce like crazy; their seedlings are my only weed problem. (To add insult to injury, they have shallow moisture-stealing roots.)

I bought the house in autumn, so I had the luxury of observing this space over a winter before I could start. I began by planning my wish list. I wanted a paved patio for entertaining, a raised area with comfortable chairs (*left*), a "woodland" path lined with wildflowers, a rock garden, and a stream, waterfall, and pond for *koi* (*above*).

I wanted a trellis for flowering vines, a spot to summer my houseplants, and of course, flowers from spring to fall. The garden is shown through the seasons on these pages: early spring (*left*); summer and fall (*above right and right*); and winter (*on next page*). I'm an incurable collector, so I must try every single plant that will possibly fit my climate and conditions. The results may seem somewhat shaggy and overgrown, in much the way that nature gardens. But I wouldn't have it any other way.

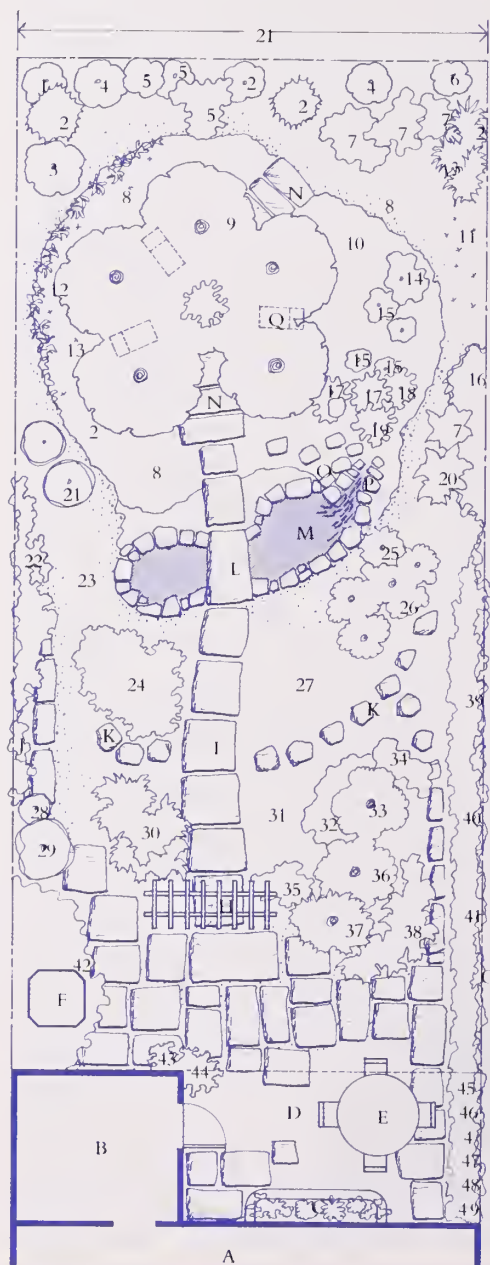
continued





The Author's Townhouse Garden

A plan of the author's 20' x 50' garden shows the planting areas, developed spaces, and selected plants from the collection.



Buildings and Structures

- A. House
- B. Mud room for wintering plants
- C. Houseplant stand
- D. Patio
- E. Table and chairs
- F. Compost pile
- G. Slatted fence
- H. Trellis
- I. Path
- J. Mirror
- K. Utility path
- L. Bridge
- M. Pond
- N. Steps
- O. Rock garden
- P. Waterfall
- Q. Adirondack chairs

Plant List

1. *Rodgersia pinnata*
2. Bamboo varieties
3. *Salix sachalinensis* 'Sekka'
4. *Salix matsudana* 'Tortuosa'
5. Fastigate trees
6. *Elaeagnus umbellata*
7. Fern species
8. *Pachysandra terminalis*
9. *Gleditsia triacanthos* var. *inermis* 'Halka'
10. Ground covers
11. *Hemerocallis* spp.
12. *Macleaya cordata*
13. *Lilium* varieties
14. *Viburnum carlesii*
15. Dwarf rhododendrons
16. Rambler rose
17. *Acer palmatum*
18. *Viburnum opulus*
19. *Viburnum plicatum* 'Mariesii'
20. *Hosta* 'Albo-Marginata'
21. *Magnolia* 'Elizabeth'
22. *Weigela florida*
23. Wildflowers
24. Perennials and bulbs
25. *Hibiscus syriacus*
26. *Hydrangea macrophylla*
27. Marsh plants
28. *Abelia grandiflora*
29. *Hydrangea aspera*
30. *Rhus typhina* 'Laciniata'
31. Shade wildflowers
32. *Astilbe taquetii* 'Superba'
33. *Kerria japonica* 'Pleniflora'
34. *Thalictrum* spp.
35. *Hydrangea macrophylla*
36. *Hydrangea quercifolia*
37. *A. p.* 'Aconitifolium'
38. Hostas, ferns, ginger
39. *Schisandra chinensis*
40. *Clematis maximowicziana*
41. *Ampelopsis brevipedunculata* 'Elegans'
42. *Forsythia* x *intermedia*
43. *Lonicera* x *heckrottii*
44. *Hosta lancifolia* in urn
45. *Lonicera periclymenum* 'Serotina Florida'
46. *Hedera helix*
47. *Salix matsudana* 'Tortuosa'
48. *Parthenocissus quinquefolia*

Ken Druse won two Quill and Trowel Awards (writing and photography) from the Garden Writers Association of America for *The Natural Garden*. He is gardening editor for *House Beautiful* and lives and gardens in Brooklyn, New York.

RHODODENDRON

FEVER

by Fred S. Winter

“Who did your landscaping?”
“How big is your gardening staff?”

Compliments like those came along about 15 years after gardening primarily with rhododendrons, a hobby that has become almost an addiction. No staff; no landscaper. Just me and my family.

Rhododendron fever has left me with hundreds of plants and the job of finding a good home for them here at Company Farm (Schuylkill Navigation Company Farm) located in the northeast corner of Chester County. When we moved here, I was looking forward to the peace and quiet of a rural environment. When restlessness set in, I wanted to beautify our 16-acre retreat, which had reverted to a jungle. I didn't appreciate the combination of ready-made high shade and northeast facing, well-drained hillsides, ideal for growing rhodies until much later.

I had always admired the lush plantings of rhododendrons and the bright flashes of deciduous azaleas along the Main Line. When I happened upon the late Eric Larson's ad for rhododendron seed in a horticultural magazine, I wrote explaining I was a greenhorn but would he, a West Coast hybridizer, send me a few packets of what might grow back East. Since then, I have discovered another wonderful resource: the American Rhododendron Society Seed Exchange, a membership perk of that Society (see box).

My initial propagation method was crude. I used unsterile, ordinary potting soil under lights in the cellar. I now set seed pans filled with finely ground, milled sphagnum moss in tubs of water, watering only from the bottom to avoid damp-off. Mother Nature was kind, however, and my initial crude efforts paid off. Too well. I had almost too many young plants for suitable planting sites keeping in mind that soil preparation is important. I should have stopped then before it was too late.

Preparing the flower beds involved considerable work. Wild grape vines as big as a wrist hung from the giant trees. We cut them near the ground so that the children and I swung out over the hill like Tarzans.

Mule path: (Above) The first rhododendron planting and seedling bed on the path 15 years ago.

Mule path now. (Below) Located under high shade with good drainage, sheltered from searing winds and sun.

continued



The old mule path leading from the corral down to the canal naturally had good soil for my first seedling crop. I learned early to cover my clay soil with lots of humus and well-rotted wood chips to make the rhododendrons happiest. The country idyll was becoming an unexpected demand on time and energy to carry out my grand design.

As the landscape plan began to jell, I was to appreciate the value of open spaces, and fortunately my "back yard" afforded this luxury. It was logical to group the azaleas and rhodies on the hillside in between flat, open areas. That was easy because we had a natural landscape already and had only to "roll with the punches" to achieve a nice effect. A beginner should keep in mind that after a few years, many rhododendrons and azaleas grow so big they rapidly fill in paths and these open areas. Luckily for me, we had plenty of room to expand the garden for I was really over my head in plants. The fever can really get out of control.

Besides being blessed with a naturally good setting, any success I've had with the garden is largely dependent upon what I've learned from seasoned teachers, generous with advice and many gift plants, mostly from members of the American Rhododendron Society of which there are several chapters in the Greater Philadelphia area (see box).

raising plants from seed

Raising plants from seed satisfies a certain creative instinct and has also fed on my appetite for rhodies. Every year I vow to stop growing them. My efforts to grow from seed have produced several rhododendrons worth naming. My very first seedling to bloom had grown like a coarse weed, but the bloom was a knockout pink. I entered it in the Truss Show at Tyler Arboretum and won "Best of Show for an unnamed hybrid." The late Dr. Henry Skinner, then director of the National Arboretum, was chief judge and would have given it the "Best of Show" had I known enough to remove ants and scales. Someone remarked that I now had one good enough to name so, on the way home, I informed my wife that I'd like to grow one pretty enough to name after her. "What are you thinking of — Lady Barbara or just Barbara?" she asked.

"No, I was thinking of Mrs. Fred S. Winter." She has decided to name one for me — *R. 'Chauvinist'*.

The children have entered into the spirit of things by helping me place rocks in the most imaginative fashion, especially in the Japanese garden. One of my most memorable Christmas presents was a curved rock wall, designed and built by my sons, curved

in such a way that it complements the arched bridge on the pathway leading from it. They transported the large stones on a toboggan to make a retaining wall low enough for us to sit by the pond, rest, and meditate.

the garden's raw bones

The winter landscape needs year-round appeal. And for me as a physician, during the winter, I imagine that I see the garden's raw bones, an x-ray if you will. The dormant season brings out the joints, appendages and the pathologic parts that can be corrected the following spring. Fleshing out the rhododendrons (which do have year-round interest), with companion plants for all seasons, would make a whole story by itself.

As one gets the hang of growing rhododendrons, success with tender sorts is possible if there are microclimates protected from searing summer heat and winter winds. *Rhododendron 'Golden Star'* and other somewhat tender yellows do well enough for me to take to truss shows. *Mahonia bealei*, one of my favorite companion plants, has grown well in the protected mule path. For borderline hardy plants and rhodies in general be sure to provide, besides shade, good air drainage. On well-drained northeast-facing slopes, I've had *R. Williamsianum* (from my original seed purchase) flower almost consistently; also *R. pseudocrysanthum*, *R. hyperythrum* and other borderline bud tender sorts. I guess I just had to defy the odds, but here again, good air drainage at the top of the hillside was a key to success. See the accompanying box for some of the better hardy rhododendrons for our area.

Just when I thought I might be recovering somewhat from my rhododendron addiction, I lost control and found myself involved with construction of the pond. It has a perfect setting nestled in a basin, which has been kept relatively open to allow vistas in all directions except of course for the hill behind; yes, you guessed, covered with a wide sweep of rhododendrons and azaleas. Bog plants and waterlilies find a home here as well.

I'd read that a good way to obtain a natural line for a pond, was to take a very long length of hose playing it out as you walk backward. It works nicely but in so doing I inadvertently backed into a 12-foot ditch, which was part of the preliminary search for springs to feed the pond. The bottom was cushioned by a foot of muck so my spinal cord was only gently jolted. Ah, the joys of gardening. But the pond had to be, and with that the rhododendron garden at Company Farm was complete. At least for now.

photos by Fred S. Winter



R. Mrs. Fred Winter. A beautiful flower for early May, but the name provoked some family controversy. (Limited availability after six years. Not registered.)



Dwarf *R. pseudocrysanthum* grown from seed.



R. hyperythrum: Early April bloom, no problem with plant hardiness but suffers flower bud blast below 0°F.



R. 'Todmorden' — one of the author's favorites. Blooms in early May. Outstanding Dexter Hybrid from Dexter's estate in Sandwich.

Rhododendron Varieties

Six rhododendrons for beginners

- R. 'Scintillation' — pink, a classic, mid-May
R. 'P.J.M.' — small leaf, purple, mid-May
R. 'Catawbiense Album' — white, mid-May
R. 'Ben Moseley' — pink, red throat, mid-May
R. 'Janet Blair' — pink white, yellow throat, mid-May
R. 'Tadmorden' — bicolor pink and white, early May

Six rhododendrons, more difficult but well worth trying

- R. 'Mrs. W. R. Coe' — large, vivid pink, mid-May
R. 'Taurus' — fiery early red, mid-April
R. *decorum* (Gable) — very large, white truss, mid-May
R. 'Golden Star' — really yellow, mid-May
R. *hyperythrum* — white, red throat, mid-April
R. *bureauvii* x *yak* — foliage, gold indumentum

Five evergreen azaleas,

One deciduous

- 'Dayspring' — early pink, medium size
'Hardy Gardenia' — double white, mid-May
'Nancy of Robin Hill' — large pink, mid-May
'Elsie Lee' — double light lavender, mid-May
North Tisbury Hybrids, 'Louisa' — late, low-growing coral
'Homebush' — double pink, deciduous azalea, mid-May

COMING EVENTS

Valley Forge Chapter Truss Show

Longwood Gardens, Kennett Square, PA; May 10, 1992, 1-5

Greater Philadelphia Chapter Truss Show — Morris Arboretum, 7414 Meadowbrook Avenue, Philadelphia, PA; May 9, 10-4

Plant Sale — Valley Forge

May 2, 9-3; Jenkins Arboretum
May 3, 11-3; Devon State Road, Devon, PA

Plant Sale — Greater Philadelphia

May 9, 9-3; Morris Arboretum (see above)

Rhododendron Seed Sources

American Rhododendron Society
Membership privilege (Seed Exchange free to all members worldwide)

Rhododendron Species Foundation
P.O. Box 3798
Federal Way, WA 98063

Fred and Jean Minch
4329 Chrisello Road East
Puyallup, WA 98372

Rhododendron Catalogs

Roslyn Nursery
211 Burrs Lane, Dix Hills, NY 11746; (516) 643-9347

Transplant Nursery
Parkertown Road, Lavonia, GA 30553; (404) 356-8947

Briarwood Gardens
14 Gully Lane, RFD 3, East Sandwich, MA 02537; (508) 888-2146

The Cummins Garden
22 Robertsville Road, Marlboro, NJ 07746; (908) 536-2591

Weston Nurseries
6 Main Street, P.O. Box 186, Hopkinton, MA 01748; 1-800-322-2002

Local Nurseries of Rhododendron Society Members

Jim Gears
R.D. #6, 2065 Parkersville, West Chester, PA 19382; (215) 793-2313

Bob Huber
Deer Run, Box 86, Salford, PA 18957; (215) 287-7305

Howard Kline
Box 2775, R.D. 2, Leesport, PA 19533; (215) 488-6445

Bill Steele
1055 Neil's Lane, West Chester, PA 19382; (215) 696-5042

Waterloo Gardens
200 N. Whitford Rd., Exton, PA (215) 363-0800; 136 Lancaster Ave., Devon, PA (215) 293-0800

Bob Wilkinson
7516 Shaw St., Philadelphia, PA 19128; (215) 482-9206

Fred Winter
936 Shenkel Rd., Pottstown, PA 19464; (215) 326-7444

American Rhododendron Society

Barbara Hall, Executive Director
P.O. Box 1380
Gloucester, VA 23061
(804) 693-4433

Annual membership of \$25 includes quarterly *Journal* and affiliation with chapter of your choice.

SOME CHAPTER LOCATIONS:

PENNSYLVANIA:

Valley Forge Chapter

meets 3rd Thursday in month at Jenkins Arboretum, Devon
(215) 688-7660 or 687-2289

Greater Philadelphia Chapter

meets 2nd Wednesday at Morris Arboretum, Chestnut Hill
(215) 576-6494 or 642-4437

Lehigh Valley Chapter

meets the last Thursday at Bethlehem Area Vo-Tech School
(215) 868-5840

Susquehanna Valley Chapter

meeting night varies in York and Mechanicsburg areas
(717) 766-5131

NEW JERSEY:

Pine Barrens Chapter

meets 4th Tuesday at Atlantic County Library, Egg Harbor Road, Hammonton
(609) 345-4932

Princeton Chapter

meets 2nd Wednesday at First Presbyterian Church, N. Main Street, Hightstown
(609) 448-1864

OTHER CHAPTERS INCLUDE:

Potomac Valley Chapter

meets at National Arboretum, Washington, D.C.
(703) 830-2656

Middle Atlantic Chapter

meets at locations in Virginia and West Virginia
(304) 343-2902

•
Fred S. Winter, M.D., is a Fellow of the American College of Radiology. On the gardening side, he is a member of the Board of Directors of the American Rhododendron Society, past president of the Valley Forge Chapter, ARS. He is also a member of the Philadelphia Society for Promoting Agriculture and The Quaker City Farmers.

Slug It Out With The Slugs

by Patricia A. Taylor

There is the gardener who has not come across slugs. These slimy pests view gardens as personal banquets and devour many vegetables and flowers with relish while seriously maiming others.

Many people feel they have to resort to deadly chemicals to keep slugs at bay. That need not be the case. If you would like to use safe, nonpoisonous ways to control slug damage, read on.

Most of the slugs that wreak such havoc in our home gardens are actually foreign invaders. The native varieties are comparatively harmless and live peacefully eating fungi and decaying vegetable matter in back woods.

The foreigners, it is surmised, came from Europe and either hid in the cargo of ships or on plants that the first settlers brought to the New World. Within 50 years, they had managed to crawl their way throughout the New England states. Now, they are found all over the country, although chiefly in the cooler states near the Atlantic and Pacific oceans.

The three most prolific European immigrants are *Limax maximus*, the large, spotted garden slug; *Arion subfuscus*, a smaller species whose spots are hardly distinguishable and whose appearance is brownish or yellowish in hue; and *Agriolimax agrestis*, a small pale gray slug that can hide just about anywhere.

Because *Agriolimax agrestis* is smaller and can go undetected more easily, one estimate puts its ratio to that of its two larger relatives at 20:1. This slug has also traveled more widely in the United States and is more frequently found than the other two in the midwest.

Nature has endowed slugs not only with tough, sturdy features but also with both male and female reproductive organs, depressing news for gardeners. Although cross-fertilization is the norm, many species can actually self-fertilize themselves. Thus, even if you disposed of all but one *Agriolimax agrestis* in your garden, that single gray slug would still be capable of laying up to 100 eggs — and some of those eggs could even contain twins.

Slugs, in other words, are here to stay. Gardeners have to accept the concept of co-existence. It might help to realize that slugs are part of nature's grand design. They are termed "secondary decomposers" and, along with earthworms and other creatures, eat dead and decaying plants — thus helping the composting process.



Limax maximus, the large, spotted slug, photographed in early morning as it headed across the author's terrace toward a moist, cool clump of *Hosta lancifolia*. Note the slime trail left behind it.



In a cool, shady corner of her house, the author grows pink fringed bleeding hearts (*Dicentra eximia*), epimediums, and yellow corydalis (*C. lutea*) without any interference from slugs. Note the German iris foliage in the upper left; slugs subsequently ate this to the ground.

While it is not possible to get rid of all slugs on your property, it is possible to have them live out most of their lives in non-garden areas such as the yard. Slugs do not particularly like lawn grasses but they can survive on them.

plan a nonpoisonous strategy

In planning a nonpoisonous strategy for your garden, however, it is necessary to know three additional facts about slugs.

- **First**, slugs have one glaring weakness: an insatiable need for water. They, along with snails, are members of the mollusc family. Aeons ago, their ancestors emerged from the sea and they have never gotten over their initial dependence on it.

Slugs, as every gardener who has hand-picked them knows all too well, are covered with slime. This slime coats the path along which slugs glide, leaving behind their telltale slime trails; it also protects their bodies as an outer wrapping.

Scientific experiments have shown that a slug can lose up to one-fifth its body weight in producing slime for a 40-minute crawl. Water is a key ingredient in the production of that slime. Without water, a slug first becomes immobile and then dries up.

- **Second**, slugs are choosy. Many sci-

entists have shown through a series of experiments that slugs have strong likes and dislikes when it comes to dinner time.

- **Third**, slugs have a definite homing instinct. This instinct is particularly pronounced among *Limax maximus* (the great big spotted slug). *Limax maximus* likes to return to the same place every night. The other two prevalent species of slugs — *Arion subfuscus* (the yellowish, brown one) and *Agriolimax agrestis* (the small gray one) — tend to be more transient in nature but they do look for cool, damp hideaways after their nocturnal feasts.

With the above in mind, here are some nonpoisonous actions that can help reduce slug damage in a garden.

- **Delay mulching until after the first or second heat wave.** In self-preservation, a slug must retreat to safe quarters during the heat and dryness of summer. If your garden is neatly mulched during the spring months, you have unknowingly created hospitable conditions for slugs to remain nested there throughout the growing season. The week of extra watering required by the mulching delay will be more than compensated for by the reduced amount of slugs.

- **Make sure all potential nesting spots are at a distance from the garden.** Move all rock and wood piles, as well as any other materials that would provide a dark, moist nesting place.

- **Create "distasteful" barriers.** Slugs have a definite aversion to the tannin in wood because of its bitter taste. A gardener who sprinkles a 4-inch to 6-inch wide path of fresh wood chips around the edge of the garden should find that few slugs will cross over. (The chips should be replaced when moss or mushrooms start to appear.)

- **Build road blocks.** Slugs do not like to travel over loose sand. If it is possible to construct a border of sand around your garden, you will find slugs reluctant to cross over. The key word here is loose. After a rain, rake the sand to create an

photos by Patricia A. Taylor

uneven terrain.

• **Grow out-of-favor plants.** I gave up on marigolds, salvias, and zinnias long ago and once saw three good-sized delphinium seedlings disappear within 24 hours. Through experimentation, I have found a large group of flowers that slugs either do not like or cannot eat fast enough to deter growth (see box).

Using the control methods just cited, I am able to grow numerous flowers in sun and shade and a good supply of vegetables in sun while co-existing with slugs throughout the growing season.

beer debunked

But where's the beer? Just about every article on slug control mentions beer traps and, in doing so, illustrates the persistence of misinformation. This method was debunked by Dr. Steve Katona in the summer 1975 issue of *Farmstead Magazine*.

Katona's research uncovered the fact that it was the yeast in beer that attracted slugs. He demonstrated that a mixture of dry yeast and water will attract more slugs than just plain beer. The beer is more lethal, however, because the slugs become intoxi-

cated in it, lose their bearings, and drown.

Without question, slugs are attracted to beer and yeast mixtures. The problem is that the mortality of some does not deter the mixture's attraction to others. As Katona noted in his article, "a gardener who tried to control slugs with dishes of beer or yeast alone would undoubtedly be amazed at home many reinforcements the

surrounding woods would supply each night to replace the invaders' losses."

Patricia A. Taylor is a writer who loves to garden. She is the author of the book *Easy Care Perennials* (Simon & Schuster, 1989) and has written garden articles for *The New York Times*, *Newsday*, *American Horticulturist*, and *Fine Gardening*.

Slug-Resistant Plants That Do Well in Author's Gardens

ANNUALS

Ageratum, alyssum, begonias, cosmos, impatiens, and wishbone flowers (*Torenia*).

PERENNIALS

Spring: *Allium* species; columbines (*Aquilegia*); *Corydalis* species; fringed bleeding heart (*Dicentra eximia*); *Epimedium* species; ferns; hellebores (*Helleborus*); coral bells (*Heuchera*); candytuft (*Iberis sempervirens*); yellow flags (*Iris pseudacorus*); and sun drops (*Oenothera*).

Summer: Yarrow (*Achillea* hybrids); coreopsis (*C. lanceolata*, *C. 'Moonbeam'*, *C. rosea*; slugs love the charming 'Goldfink'); daylilies; *Geranium* species; bee balm (*Monarda*); black-eyed susans (*Rudbeckia hirta* and *R. fulgida* 'Goldstrum'); and fuzzy gray foliage plants such as artemisias, rose campions (*Lychnis coronaria*), lamb's ears (*Stachys byzantina*).

Fall: Japanese anemone (*A. vitifolia* 'Robustissima'); asters; *Boltonia*; perennial ageratum (*Eupatorium coelestinum*); lobelia hybrids; and sedum.

The Plantfinder

A free service for *Green Scene* readers

If you can't locate a much-wanted plant send your name and address (include ZIP), the botanical and common name of the plant to Plant Finder, *Green Scene*, PHS, 325 Walnut St., Philadelphia, PA 19106.

WANTED

Heptacodium miconoides. Contact George C. Buzby, Jr., 997 Stoneybrook Drive, Blue Bell, PA 19422.

Nopalxochia phyllanthoides 'Deutsche Kaiserin.' Contact J.L. Mitchell, 1100 Bryn Mawr Rd., Baltimore, MD 21210

and

D.E. Dayton, 95 Newtown Lane, East Hampton, NY 11937.

Rosa x rehderana 'Eblouissant.' (1918) Contact Wesley J. Coddington, 250 W. Grand Ave., #A107, Rahway, NJ 07065-4124.

SUBSCRIBE TO GREEN SCENE, The Magazine of The Pennsylvania Horticultural Society.

Only \$9.75 for 6 issues. Make check payable to The Pennsylvania Horticultural Society.

Send to: Linda Davis
Pennsylvania Horticultural Society
325 Walnut Street
Philadelphia, PA 19106

For more information call
Linda Davis (215) 625-8265
or (215) 625-8250.

CLASSIFIED ADS

GREENHOUSE CONSTRUCTION

Sales and Service

Janco, Lord & Burnham and more.

Call Robert J. LaRouche at
Glass Enclosures Unlimited

228 Poplar Avenue
Wayne, PA 19087
(215) 687-2444

Unique & Unusual Rhododendrons & Azaleas

Greater Phila. Chapter Am. Rhodo. Soc.

Annual Plant Sale

Sat. May 9, 10 am - 4 pm

Morris Arboretum of Univ. of Penna.

Chestnut Hill, PA

Arboretum admission rebated
with minimum purchase.

Further Information: (215) 642-4437 or 576-6494

PERENNIALS

Our 50-page Catalog and Planting Guide provides useful information on more than 1,000 varieties, many rare and unusual. Send \$2 for your copy (refundable on your first order).

THE CROWNSVILLE NURSERY

PO BOX 797

CROWNSVILLE, MD 21032

PERENNIALS-ORNAMENTAL GRASSES

DAYLILIES-HOSTAS-FERNS

OR COME VISIT US AT
BRIDGEWOOD GARDENS

1103 HONEYSUCKLE LANE
ANNAPOLIS, MD 21401

SPECIALIZING IN UNUSUAL FLOWERING

PLANTS FOR THE GARDEN.

Please call for seasonal hours.

(410) 849-5640

THE INN WHERE THE GUESTS make all the arrangements... with flowers. A 2-day seminar on basic flower arranging with lots of "hands-on" experience plus a stay at a classic Vermont Country Inn equals a great weekend. For information call or write:

The Inn at Pittsfield
Route 100 Box 675 GS
Pittsfield, VT 05762
(802) 746-8943

Rare Perennials Plus...

Hostas Grasses Water Plants Shrubs
Vast Selection. Demonstration Gardens.

Heart's Ease Greenhouse

Tewksbury Orchids
Califon, New Jersey
(908) 832-2708

continued

Picnic in the Park with Martha Stewart.

Thursday, June 4, 10:30-3:00, Memorial Hall
Martha Stewart, author of 12 books on cooking, gardening, and entertaining, returns to Philadelphia to offer intriguing ideas on gardening and entertaining. This special event is offered as a preview for "Historic Houses in Flower," featuring Park Houses creatively decorated by area professional florists.
Call (215) 787-5449 for ticket information.

GARDENER'S SOURCE GUIDE — New 1992 directory. 510 Nursery and seed mail order companies offering FREE catalogs. Many full color! Flowers, plants, vegetables, trees, everything! \$5.00.
GSG, P.O. Box 206G, Gowanda, NY 14070-0206.

DISTINCTIVE

PENNSYLVANIA-GROWN PLANTS

for gardening and landscaping. Many scarce, rare and unusual selections along with hardy natives available. Call or write for FREE catalog.

APPALACHIAN GARDENS

Box 82
Waynesboro, PA 17268-0082
(717) 762-4312

JAMES FARR LANDSCAPE CONSTRUCTION

- Planting and masonry design/installation
- Pools, waterfalls, drainage systems, Japanese gardens, traditional/contemporary gardens, etc.

(215) 884-1720

SPECIMEN PLANT MATERIAL

- *Sciadopitys verticillata* — 22 ft., \$4,200
- *Magnolia grandiflora* — 27 x 18 ft., \$4,200
- Pine & Spruce, 14-18 ft., \$625
- *Acer pal.* 'Bloodgood' — 15 ft., \$1,450
- *Acer palmatum dissectum* — 12 ft. sp., \$3,200
- *Cornus kousa* — 15 ft., \$1,200
- *Ilex opaca* — 18 ft., \$1,600
- *Buxis suffrut.* — 6 x 12 ft., \$2,200

Planted prices may vary.

Many other plants available!

JAMES FARR LANDSCAPING

(215) 884-1720

or

TREE TRANSFERS, INC.

(215) 635-2310

CONTEMPORARY STRUCTURES FOR HOME AND GARDEN

At last! Great new designs for those garden necessities. Arbors, Trellises & Gates, built in steel to last. Write or call for catalog.

The Painted Garden, Inc.

304 Edge Hill Road
Glenside, PA 19038
(215) 884-7378

Explore a variety of historic gardens and grounds in

GERMANTOWN'S SECRET GARDENS

A \$10 "GatePass" is good for the entire month of May — plus special events on Saturday, May 30th.
For information: (215) 848-1777

LARGEST SELECTION OF RHODODENDRONS & AZALEAS

on the East Coast with many new varieties. Also Kalmia, Pieris, and many companion plants. Mail order catalog, \$2. **ROSLYN NURSERY**, Dept GS, Box 69, Roslyn, NY 11576.

PERENNIAL WEEK

JUNE 11-17

WATERLOO GARDENS

All-star lineup for perennial lovers.

Something special will highlight every day of the week — speakers, workshops, special sales.

• Thursday, June 11

Workshop — "Division of Perennials"

6 pm Devon & Exton

Shopping & Border Design By Appointment

• Friday, June 12

Bog Plants & Plants for Water's Edge

10 am Devon/6 pm Exton • Registration req. \$5

Yvonne England, Horticulturist

Shopping & Border Design By Appointment

• Saturday, June 13

Creating a Mixed Border

11 am Devon/2:30 pm Exton • Registration req. \$10

Elisabeth Sheldon, author of *A Proper Garden*

• Sunday, June 14

Hostas: Their Use in the Landscape

1 pm Devon/3:30 pm Exton • Registration req. \$5

Warren Pollock, past president Hosta Society

• Monday, June 15

Workshop — Perennial Maintenance

6 pm Devon & Exton

• Tuesday, June 16

Sophisticated Native Perennials

10 am Devon/6 pm Exton • Registration req. \$5

Pat Christopher, Longwood Gardens

• Wednesday, June 17

Herbs for Perennial Border

10 am Devon/6 pm Exton • Registration req. \$5

Jeanine Vannais, Horticulturist, Pennsbury Manor

WATERLOO GARDENS

Exton — 200 N. Whitford Rd. (215) 363-0800

Devon — 136 Lancaster Ave. (215) 293-0800

TREE & GARDEN LIGHTING

POND & POOL LIGHTING

Add a warm touch to the patio and outdoor area year round.

John J. McGettigan, Inc.

Flourtown, PA 19031

215-233-4900 Est. 40 yrs. 215-233-1030

Rutgers Hybrid Dogwoods

Showy & pest-resistant new releases

Magnolia 'Elizabeth'

Many other interesting trees & shrubs

Fairweather Gardens

Box 330, Greenwich, NJ 08323

(609) 451-6261

Call or write for price list

Water Lilies

Large selection of water garden plants

Liners, pumps & pond supplies

Goldfish & Koi

Consultation, design, installation

Joan Nangle

at Potter's Landscaping Co.

359 Paoli Pike

Malvern, Pa. 19355

(215) 647-2926

AMERICAN GREENHOUSE SYSTEMS

- Maintenance on ALL greenhouses — IBG, Janco, L&B, Rough, National, etc.
 - Refurbishing older greenhouses
 - Sales of Poly, Lexan and Glass Enclosures
 - Redwood and Aluminum Solariums and Conservatories
 - Yearly Maintenance Contracts
- P.O. Box 817 Malaga New Jersey 08328
(609) 694-3500 FAX (609) 694-1840
(800) 676-3505

INDIAN RUN NURSERY

RHODODENDRONS

New Jersey grown, small-leaved and large-leaved species and hybrids. Iron-clads and Eastern hybrids of Dexter, Gable and Nearing our specialty. Landscape sizes available: 3-6 ft. of specimen quality. Also *Pieris japonica* and azaleas in large sizes. By appointment only.

INDIAN RUN NURSERY

400 Allentown Road
Robbinsville, NJ 08691
(609) 259-2600

DEER PROOF PLANTS

HAVE BEAUTIFUL LANDSCAPES
AND YOUR WILDLIFE, TOO

We grow plants resistant to damage by deer. Now your landscapes can be varied, beautiful, and you can live with the Deer, too!

CONTACT US

HILDEBRANT NURSERIES

OLDWICK NJ

"ESTABLISHED 1923"

908-439-2256

FREEZE-DRIED BOTANICALS

Quality freeze-dried flowers, fruits and vegetables to suit your design needs. Call for our catalog and seasonal items.

(215) 992-9832

206 Ross Rd Ste 105A • King of Prussia, PA

PERENNIAL FLOWER PLANTS

Over 500 varieties offered in two sizes. Starter plants in cell packs of 1-year-old flowering size. Send \$2 for catalog (refundable) to Perennial Gardens and Nursery, 2566 Brick Church Rd., Weedsport, NY 13166 (315) 626-2482

BRIAN J. TEMME

TREE SERVICE

- Quality Tree Care
 - Pruning, Trimming, and Removals
 - Fertilization, Disease and Insect Control
 - Cabling and Stump Removal
- (215) 572-5665 or (215) 657-0555

GARDEN VISITING HOURS

Longview Farm

Bodine Road Box 76

Malvern, PA 19355

Noon to Dusk

April 15th to October 15th
Thursday—Friday—Saturday

Admission \$5

Children under 12 free

Appointments necessary for large and out-of-town groups with schedules.

Unusual plants for sale.

You are welcome to bring a picnic to eat in the barnyard.

Map mailed on request.

Joanna Reed, Gardener

REED'S WOODS

QUALITY WORK AT A FAIR PRICE

Springhouse Restorations
Additions/Renovations
Decks, Flagstone, Brickwork
Carpentry & Landscape Structures
Call for Free Estimate
76-A Bodine Road
Malvern, PA 19355
(215) 827-9663

**GARDEN DESIGN:
ARCHITECTURE & SITE PLANNING**
Todd R. Phillippi, AIA
Integrated Design Specialists
Free Newsletter
(215) 750-8770

COMFORTABLE GARDEN FURNITURE
English Regency Style
Carefully Hand Forged
Entirely Hand-Riveted
Fred B. Odell
6209 Upper York Road
New Hope, PA 18938
(215) 794-8967

AFRICAN VIOLETS
100 varieties, standard, micromini, miniature, trailers, variegated types. Greenhouses open daily. Cultural book, \$6.95 ppd. Color catalog 50¢. **TINARI GREENHOUSES**, 2325 Valley Road, Huntingdon Valley, PA 19006 (215) 947-0144

DISCOVER YOUR HIDDEN GARDEN
Low-voltage lighting systems designed, installed & serviced utilizing quality components from America's leading manufacturers. 25 years experience in lighting design assures you of the desired effect be it subtle or dramatic. Our maintenance-free lighting carries the best guarantee in the business: we even warrant bulb life. Call 215-376-1181 for information or appointment.

THE LANDSCAPE LIGHTING COMPANY

TREE TRANSFERS, INC.
Large Tree Transplanting and Sales
Machine and Specialized Hand Digging
Dealers and Locators of
Large Horticultural Specimens
Mature Screening and Shade Trees
Assessing and Renovating Mature Collection
and Estate Gardens
Plant Material Purchased
(215) 635-2310

**ROBERT W. MONTGOMERY
LANDSCAPE NURSERY**
Chester Springs, Pa.
Silver Trophy Winner for
the 1992 Central Feature Exhibit
of the Philadelphia Flower Show
"Horizons for Discovery"
A Southwest Courtyard
and Desert Garden

Call for a landscape design consultation with the Philadelphia Flower Show's 5-time "Best in Show" winner. Robert Montgomery's professional design and contracting staff, specialists in all phases of landscape construction and planting, collaborates closely with the property owner to assure satisfaction.

Visit our full-service Nursery,
Garden Center and Greenhouses

Over 1,000 Perennial
Varieties in mature sizes
Trained Horticulturists
on staff daily

Diagnostic Lab open daily
Top-of-the-Barn Patio
Furniture Showroom

Our Only Location:
Route 113, Chester Springs, PA
363-2477
Open 7 Days a Week

SHANAHAN'S TREE FARMS AND NURSERIES
R.D. #2, BOX 73B
HONEY BROOK, PA 19344
(215) 273-3318

• **APRIL 15th SHANAHAN'S GARDEN CENTER**
opens for its 10th year featuring container trees, shrubs, dwarf conifers, perennials including varieties of Hosta, Azaleas, Rhodos, Roses.

• Gift certificates for all seasons.

• **SINCE 1965 — RETAIL & WHOLESALE** —
field grown conifers & deciduous trees & shrubs.
• Call for free selection list or an appointment to
choose your landscape needs from our 200
acres in Chester County.

**LINDA CORSON
LANDSCAPE DESIGN**

• Consulting

• Plans

• Supervision

Member ASLA

Registered Landscape Architect
215-247-5619

COX & CO., INC.

Tree and Landscape Services.

Tree preservation, planting, removals.

(215) 687-1780

Nursery: 15 Airport Rd., Limerick, PA 19468

David Brothers
BEAN ROAD NURSERY
Landscape Architects, Builders
and Nurserymen

Providing the Fine Art of Garden Construction
and Landscape Restoration

**QUALITY SERVICE WITH COURTESY
AND RELIABILITY**

EDGAR and KIM DAVID
247-2992 584-1550

The Philadelphia Flower Show.
Landscape Design and Planning.
Installation and Renovation.

For the Country Garden

Herbs from the Finest Growers

Over 100 Varieties

The Best Plants Featuring

The Styer Award Winners

Garden Accessories and Necessities

Lead Stone Terra-Cotta

Tools to Last a Lifetime

Water Gardening Pool Supplies Books

Bonsai Tools Pottery Plants

Shade Color Fragrance

Experience the Pleasure of Gardening

J. Franklin Styer Nurseries

Since 1890

Celebrating 100 Years in Horticulture

Open Seven Days A Week

(215) 459-2400

JOSEPH MANERO & SONS, INC.
MASONRY
(215) 885-3711

- Brick or Stone Garden Walks and Walls
- Flagstone and Slate Terraces
- Over 45 Years Experience
- Design Service Available

GARDEN DESIGN — Design and installation of
specialty gardens including perennial borders,
herb, kitchen and English cottage gardens.
CAROL MANICONE (215) 348-4830.

MEADOWBROOK FARM
1633 Washington Lane
Meadowbrook, PA 19046
887-5900 Mon-Sat 10-5

AN ENCHANTING EXPERIENCE

awaits you in our gardens and greenhouses.
Choose from lovely geraniums, beautiful an-
nuals, thousands of perennials and flowering
and evergreen shrubs that are perfect for sunny,
shaded or groundcover areas. Accent your
garden with rare plants, topiaries, fountains,
statuary or beautifully planted patio pots. Unique
gift and baskets of blooming plants are our
specialty.

For The Better Things in Gardening
MEADOWBROOK FARM

**PLANTS PUT MORE
LIFE IN YOUR LIFE
WATERLOO GARDENS
OFFERS YOU MORE:**

- Spectacular Spring Displays
- Award-Winning Landscape Design
- 50-ACRE NURSERY
- Over 200 NEW cultivars of Perennials,
over 1,400 cultivars in all!
- Over 100 varieties of Herbs
- Over 130 varieties of Roses,
newest winners & old-fashioned.
- Over 60 varieties of Azaleas
- Over 40 varieties of Rhododendrons
- Aquatic garden plants & supplies
- Pools, Fountains, and Statuary
- Unique Seeds and Bulbs
- Rare Specimen Plants
- THE NEW 1992 ANNUALS
- European Dish Gardens
- Orchids • Bonsai • Topiaries
- Garden and Patio Furniture
- Exquisite Gift & Gourmet Shops
- Unique Bridal Registry
- Fabulous Flower Shop

**WATERLOO GARDENS
DELAWARE VALLEY'S
LARGEST GARDEN CENTER**

Two Locations — Open 7 Days a Week
Exton — 200 N. Whitford Rd. (215) 363-0800
Devon — 136 Lancaster Ave. (215) 293-0800

PENNSYLVANIA'S BEST

Oak Bark Mulch — Dark, Fine Shredded. Picked
up or delivered in bulk. Mushroom Soil & Topsoil
also available.

(215) 483-8922 (215) 482-1711

THE CLASSIC LOOK OF A GARDEN

Designed for today's lifestyle.
Plantings, Rock & Boulder Work, Artificial
Ledges and Waterfalls.

Designed, installed & warranted exclusively by
E.G. WITOMSKI CO.
Since 1976.

Inquire (215) 565-8826

**Outdoor Furniture Specialists
Hill Co.**

An outstanding selection of outdoor furniture
and accessories. Distinctive designs in alumi-
num, wrought iron, teak, and all-weather wicker.
Ask about our seasonal discounts.

8615 Germantown Ave.
Chestnut Hill (215) 247-7600

Green Leaf Tree & Landscape Services
"Tree conservation for the future"
(215) 646-1011

Advertising copy should be submitted 8 weeks before issue date: November, January, March, May, July, September. Minimum rate \$22. Charges based on \$6.50 per line. Less 10% discount for two or more consecutive issues, using same copy. All copy should be accompanied by check made out to PENNSYLVANIA HORTICULTURAL SOCIETY and sent to Joseph Robinson, GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

Jim Castellan climbs a 28-ft. ladder to rescue an exposed bee colony from anticipated cold weather. He cuts the combs, section by section, and carries them down in the box with a cloth thrown over it. See story on page 10.

Photo by Liz Ball

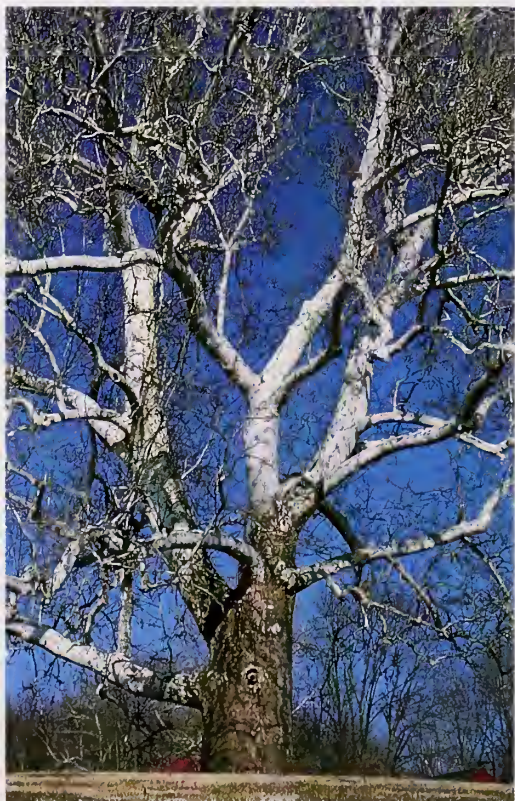


GREEN SCENE

An aerial photograph of a dense forest. A road with white dashed lines runs diagonally from the bottom right towards the center. A metal truss bridge crosses a stream or river in the lower left. The trees show a mix of green and yellow, suggesting early autumn. The overall scene is lush and green.

THE MAGAZINE OF THE PENNSYLVANIA HORTICULTURAL SOCIETY • JULY/AUGUST 1992 • \$2.00

All About Trees
Maintain for the present;
plant for the future



Front Cover: Native hardwood forest canopy seen from the Henry Avenue bridge across Lincoln Drive in Philadelphia's Fairmount Park. See page 3.

Front Cover: photo by John Gouker



in this issue



3. Oaks and Other Favorites

Ernesta D. Ballard

8. Choosing Trees for Your Landscape

Victoria Steiger Olin

13. Some Trees for Small Gardens

Julie Morris

17. Roots — What Happens Underground. How to Protect Your Tree's Roots

Joanne Miller

21. Pruning: The Miracle of Order

Hal Rosner

24. The Arborist — Your Tree's Best Friend. When and how to hire an arborist

Kathleen A. Mills

25. Common Tree Diseases

Lisa Blum

29. Tender Loving Care for Street Trees

Patricia Schrieber

32. Trash for Trees

Libby J. Goldstein

33. People Make a Difference

Anne S. Cunningham

36. What Center City Green and Center City Residents Association Learned From the Street Tree Inventory

Kathryn Newland

37. Tour the Champion Trees of Southern Chester County

Scott F. Woodbury

40. Classified Advertising

42. Index to Volume 20 of the *Green Scene*

Volume 20, Number 6 July/August 1992

THE PENNSYLVANIA HORTICULTURAL SOCIETY

325 Walnut Street, Philadelphia, Pa. 19106

Telephone: 215-625-8250

Horticultural Hotline: 215-922-8043

Monday through Friday 9:30am to 12 Noon (Hotline is closed in December)

Membership Information: Linda Davis, 625-8265

Donald L. Felley / *Chair*

Jane G. Pepper / *President*

Jean Byrne / *Editor*

Joseph P. Robinson / *Editorial Assistant*

Carol C. Lukens / *Editorial Assistant*

PUBLICATIONS COMMITTEE:

Anne S. Cunningham / *Chair*

Kathryn S. Andersen

Walter G. Chandoha

Judy Foley

Charles W. Heuser

Gene Jackson

Anthony A. Lyle

Robert McCracken Peck

Mary Lou Wolfe

L. Wilbur Zimmerman

Designer: Julie Baxendell, Baxendells' Graphic

Printer: Howard Printing

The GREEN SCENE, (USPS 955580), Volume 20, No. 6, published bimonthly, January, March, May, July, September, November; by the Pennsylvania Horticultural Society, a non-profit membership organization at 325 Walnut Street, Philadelphia, PA 19106. Subscription: \$9.75—Single Copy: \$2.00. Second class postage paid at Philadelphia, PA 19106. • **POSTMASTER:** Send address change to THE GREEN SCENE, 325 Walnut Street, Philadelphia, PA 19106.

© Pennsylvania Horticultural Society, 1992

Green Scene subscriptions are part of the membership benefits for:

Blithewold Gardens and Arboretum, Bristol, Rhode Island
Botanical Gardens at Asheville, North Carolina

Cox Arboretum, Dayton, Ohio

Frelinghuysen Arboretum, Morristown, New Jersey

Hershey Gardens of Hershey, Pennsylvania

Maryland Horticultural Society, Baltimore, Maryland

Pennsylvania Horticultural Society, Philadelphia, Pennsylvania

Phipps Friends, Pittsburgh, Pennsylvania

The San Antonio Botanical Gardens, Texas

Staten Island Botanical Garden, Inc., New York

the green scene / july 1992



OAKS AND OTHER FAVORITES -

The Big, Deciduous Trees of the Delaware Valley

 by *Ernesta D. Ballard*

photo by John C. Gouker



Quercus rubra, red oak. The most popular of the oaks readily available. Typical height 75 to 100 ft; typical spread the same.

The Delaware Valley is one of the best places in the world for the big, deciduous trees that foresters call hardwoods. Soils are good; rain is evenly distributed throughout the year, and there is no strong prevailing wind. The growing season is eight months long. That venerable authority on plant geography, A.F.W. Schimper, classifies ours as "a true forest climate."

The vigorous growth of hardwoods under these favorable conditions produces forests

dominated by a dense summer canopy of tall trees, with a thin lower layer of small trees, shrubs and broad-leaved evergreens. As Schimper puts it: "This forest in its most luxuriant and lofty form, consists essentially of trees alone."

As for the individual trees, whether they are growing in the forest or as free-standing specimens, they are magnificent. Visitors from other states and countries marvel at their size, their variety, their beauty, and their majesty.

The Delaware Valley is also one of the best places in the world for people to enjoy big deciduous trees throughout the year. We have two or three winter months with frost in the ground, a nip in the air, and no leaves to hide the diverse, intricate patterns of branches and twigs. Next, spring with its torrent of bursting buds, a delight that can be fully appreciated only in contrast to winter. Then, summer, sufficiently hot and humid to produce foliage of almost tropical luxuriance — and to make us welcome the

continued

OAKS AND OTHER FAVORITES

fall. And finally, autumn, our most distinctive season. In September, October and November we have gorgeous mild weather — warm, sunny days, and nights cool enough to turn our woodland foliage, first to the yellows and oranges of tulip poplars, maples, birches and elms, then to the reds and scarlets of dogwoods, oaks, sweet and sour gums and sassafras. This wonderful transformation takes place in only two parts of the world. Our own eastern seaboard from the Carolinas to Canada is one; the other is the northeastern seaboard of China and Korea.


So for us, living in the last decade of the twentieth century, our native hardwoods are a horticultural delight, to be enjoyed in every season. But for our forebears, the settlers who came to the Delaware Valley in the seventeenth century, the hardwoods were a basic condition of life. An almost unbroken hardwood forest extended from

the Atlantic to the Alleghenies. To obtain arable land and pastures, the settlers had to cut shrubs, fell trees and grub out stumps, a back-breaking task. Clearing a 40-acre farm was a full life's work. Robert P. Multhauf, historian of Science at the National Museum of History and Technology, in a chapter contributed to Charles E. Peterson's compilation titled *Building Early America* (Chilton Books, Radnor, Pa., 1976), says: "Wood was thus seen as a menace and its disposal as an urgent 'necessity.' Mass burnings became common, especially after 1750 when the demand for potash in England created an additional economic incentive. The new Americans quickly demonstrated their efficiency and the survival of woodlands on the eastern seaboard owes less to the fact that some regions found it desirable to legislate protection of their remaining forests, even in the eighteenth century, than

to the continued challenge of apparently inexhaustible forests in the west."

a treasure trove

But if the aboriginal forest was sometimes a menace, or at least an obstacle, at other times it was a treasure trove. It offered a choice of materials that would put a modern lumber yard to shame. Hardwood timber included oak (many varieties), chestnut, tulip poplar, hickory, sycamore, sweet gum, sugar maple, birch, linden, elm and ash — each adapted to particular uses in framing barns and houses, building ships and wagons, or making furniture, fixtures, tools or equipment. There was pine for planks, walnut and cherry for furniture, willow for baskets, locust for fence posts, sugar maple for syrup, and sassafras for tea and fragrance. And of course there were the nut trees: chestnut, walnut and hickory. To quote Dr. Multhauf again: "Under these



A view along Wissahickon Creek in Philadelphia's Fairmount Park, notable for its wide variety of native trees.



photo by Paul Meyer

Carya ovata, shagbark hickory. Typical height 75-100 ft.; spread 35-50 ft. The grandest of all the nut trees with its edible nuts and shaggy bark.



photo by John C. Gouker

circumstances the Americans found it convenient to depend upon wood for the requirements of daily life to a degree largely forgotten in other parts of the world. And they managed to base on wood a civilization which seems in many ways superior — at least in retrospect — to that which was to succeed it.”

The forest was also a source of fuel — in fact, the only source. Sweet birch was highly prized, but almost any hardwood could be used for heating or cooking. As the population grew and industries developed, the demand for fuel became almost insatiable. Philadelphia, the second most populous city in the British Empire, had to reach out further and further for its cordwood, some coming by water from the upper reaches of the Schuylkill and the Delaware and some by wagon from New Jersey.

Manufacturing was also dependent on wood. Charles and Mary Beard, in their *Basic History of the United States* (Doubleday, Dorran & Co., NY, 1944), tell us that among the first American industries was shipbuilding: “It was cheaper to build vessels in the colonies, where materials were abundant, than in England, for the English had to import a large part of their ship timber and naval stores.”

The next industry to develop was iron making; the shipbuilders needed iron for chains, anchors, nails and fittings. The iron was separated from iron ore in furnaces fueled with charcoal, for which the forest provided the raw material. As the Beards put it: “The English had iron ore in abundance and their iron industry had reached a high stage of development. But they used charcoal for smelting and were exhausting their local wood supply. On the other hand, Americans had iron ore in almost every colony and their charcoal sources were practically unlimited.”

Ultimately, even the charcoal sources that the Beards called “practically unlimited” ran out. John McPhee, in his book *The Pine Barrens* (Farrar, Straus & Giroux, NY, 1968), remarks that each of the numerous iron furnaces in the barrens consumed a thousand acres of pine a year, a rate that McPhee says could not be sustained.

The result of this clearing, burning, lumbering and charcoal making was the destruction of our native forest on a scale comparable to the current destruction in the Amazon. All we have left of what Schimper called the “forest in its most luxuriant form” are isolated small stands that for one reason or another have not been logged in the last 150 years. Those of us who live near Philadelphia can see them in the Wissahickon, Pennypack, Cobbs

Creek and Chamounix valleys in Fairmount Park. Other examples can be found in state and county parks and a few large estates.

In addition to these remnants of mature forest, there are younger stands of native trees in undeveloped hollows and valleys, surviving hedgerows and the borders of rural roads. They have not attained the spaciousness and majesty of the centuries-old forests that greeted the settlers. But they are one of the defining characteristics of the present-day landscape with which we are all familiar.

choosing a big deciduous tree

The distinctive characteristics of our natural landscape should be taken into account by anyone choosing a big deciduous shade tree for a site in the Delaware Valley. One alternative is to harmonize with the landscape, i.e., to plant a native

The survival of the elms, under the care of an expert arborist, strengthens my belief that we should never give up on a blighted or pest-ridden species. The surest way to make any kind of tree extinct is to stop planting it.

variety. The other is to seek contrast or diversity by planting an exotic. From the late nineteenth century to the mid-twentieth century exotics were popular. Older properties in Chestnut Hill, where I live, are crowded with European beeches in fancy forms and colors — weeping, fern-leaved, copper and purple. Ginkgos were another favorite. Many of these foreigners are impressive specimens, but they often don't seem at home in the Delaware Valley. Their textures, patterns and habits of growth are different from those with which we are familiar and comfortable. Perhaps that's why, today, landscape architects, designers and homeowners are returning to native trees — which I applaud.

Once you have decided to plant a native tree, the question becomes, which native tree to choose. Hui-lin Li's *Trees of Pennsylvania, the Atlantic States and the Lake States* (University of Pennsylvania Press, 1972) describes more than 50 species in 20 genera that might be classed as large native hardwoods. At the end of this article you will find a list and brief descriptions of some that seem worthy of consideration. They offer a variety of sizes, proportions, habits of growth, leaf shapes and colors, and bark patterns and textures. The choice depends on your needs and taste.

You will not find all my listed varieties at

continued

any nursery, and there may be some that you will not find in any catalog. Don't let that deter you from asking for them. The nursery owner will probably say that there isn't enough demand to justify the difficulty and expense of propagating them and growing them to marketable size. But the only way to create a demand is for more people to make requests and then to give their business to growers who satisfy them.

My own experience tells something about hardwoods as shade trees. In the mid-1940s, living on a property devoid of shade, we planted two red oaks and two American elms. One of the oaks died after being partly uprooted by a storm. The others have flourished. Today, they tower above the house, their lower limbs at the level of its eaves. Their crowns interlace, notwithstanding that the elms are 60 feet apart and 50 feet from the oak; we should have allowed 75 to 100 feet. In summer they form an airy canopy, transforming the terrace from a sunbaked plain to a shady bower. The survival of the elms, under the care of an expert arborist, strengthens my belief that we should never give up on a blighted or pest-ridden species. The surest way to make any kind of tree extinct is to stop planting it.

Meanwhile, we have moved to a house on the edge of the Wissahickon Valley. Our lawn is bordered by 150-year-old oaks and tulip poplars an order of magnitude bigger than the 50-year-old specimens at our former place. Having started life as forest trees, they form the dense canopy described by Schimper, creating too much shade for many flowering plants I would like to grow. But we are cool and comfortable in the summer. And the vertical scale of the canopy rivals a cathedral.

In making your own selection, you should think about the characteristics of the tree and the place it will grow. Don't put a shade tree in the middle of a paved terrace unless you are prepared to sweep under it at least once a week. Every season has its form of debris, flowers, fruits (acorns, nuts, etc.), leaves, or twigs. If the tree is to be on the lawn, give it plenty of room. Some of our hardwoods reach astonishing size. In the American Forestry Association's *National Register of Big Trees* I spotted the following, all located in the eastern seaboard, although not in the Delaware Valley: a pignut hickory 190 feet high, with a 78-foot spread; a sugar maple 91 feet high, with an 80-foot spread; a sweet gum 136 feet high, with a 60-foot spread; a tulip poplar 146 feet high, with a 125-foot spread; and a white oak 107 feet high, with a 145-foot spread. Note the different proportions: in the case of the pignut and sweet gum the height is twice

photo by L. Wilbur Zimmerman



Cladrastis lutea: yellowwood. Yellowwood bears panicles of white flowers every other spring. The finest specimen in the area is at Bartram's Garden on the Schuylkill.

the width; in contrast, the oak is half again as wide as it is high. It would not be comfortable within 200 feet of a building or another big tree.

These dimensions are maximums, reached only by occasional giants growing under the most favorable conditions. Average sizes are considerably smaller. You can find typical heights in any manual (Wyman's *Trees for American Gardens* [MacMillan, NY, 1990, 3rd edition, available in PHS Library] is an old standby), but

This wonderful transformation takes place in only two parts of the world. Our own eastern seaboard from the Carolinas to Canada is one; the other is the northeastern seaboard of China and Korea.

typical spreads are seldom given. Try books on landscape design, or, better yet, find a picture of a mature specimen or look at the real thing in an arboretum.

plant for the future

Bear in mind that hardwoods can be transplanted much more successfully when they are small; that even the fastest growing hardwood takes 25 to 30 years to achieve respectable size, and that, given a suitable location and reasonable care, all will outlive the person who plants them. When you plant one you will be planting for future generations — a responsibility any horticulturist should gladly assume.

By reasonable care I mean water conscientiously and fertilize regularly during the first two or three years; also, prune carefully to encourage the desired pattern of growth. Mature trees, especially old ones, should be pruned and fertilized every five to ten years by a qualified arborist to control the spread of the canopy and limit leaf area. This reduces the risk of breakage from ice and high winds and the danger of stress and susceptibility to disease in unusually dry years. It's a sensible way to

protect the investment in time and money represented by a big hardwood on your property.

I said that you will be planting for future generations. How many? The answer is three or four, but not a dozen. From time to time I hear of a Delaware Valley oak said to be 600 years old. Very unlikely. Any tree in the Delaware Valley that is 300 years old should be in the *Guinness Book of Records*. The half life of oaks, meaning the number of years within which half of any planting will be eliminated by disease, pests or mishap, is in the order of 100 years. It is much shorter for the flowering trees described in Julie Morris's article in this issue. By way of quaint illustration, John Fanning Watson's *Annals of Philadelphia and Pennsylvania in the Olden Time*,* compiled in the middle of the nineteenth century, lists only a dozen surviving "aboriginal trees," meaning, in the author's words, "such primitive trees of the forest race as still remain among us from days contemporary with the founding of the city." He adds, "These alone have escaped the British desolations, the axe of their owners, and time."

And so to my list. In presenting it I emphasize that these are trees I have enjoyed. They are among the Delaware Valley's best. I wish more people would plant them.

In preparing this list, I consulted a number of colleagues who know a lot about shade trees. All made thoughtful suggestions, most of which I've incorporated. Almost all said that they would leave out the American elm. I couldn't do that!

The people I consulted are: John Collins, head of the Department of Landscape and Horticulture at Temple University, Ambler Campus; Paul Meyer, director of the Morris Arboretum of the University of Pennsylvania; Paul McFarland, president of McFarland Landscape Services; Jim Donaghy, director of Operations and Maintenance, Fairmount Park Commission; George R. Clark, knowledgeable horticulturist; Leslie Sauer, principal and landscape architect, Andropogon Associates, Ltd.; Richard W. Lighty, director of Mt. Cuba Center; and Fred Ballard, who walks and runs in the Wissahickon almost every day. Fred also helped with research and editing.

Ernesta D. Ballard was director then president of the Pennsylvania Horticultural Society from 1963 to 1981. She now serves as a member of the Fairmount Park Commission, and she chairs the Philadelphia Foundation, which was the first funder of Philadelphia Green.

*Three editions: Pennington, Philadelphia, 1844, and Lippincott, Philadelphia, 1857 and 1868. The 1844 edition is available through PHS Library.

Ernesta D. Ballard's Favorite Delaware Valley Hardwoods

Note. The first numbers in parentheses after the common name indicate typical height at maturity. The second numbers indicate typical spread. The figures are taken from *Native Trees, Shrubs and Vines for Urban and Rural America* by Gary L. Hightshoe (Van Nostrand Reinhold, New York, 1988).

Acer rubrum red maple
(75 to 100 ft) x (50 to 75 ft)

You can't miss red maple in early spring because of its bright red flowers. In autumn it puts on a second great show with brilliant red leaves. There are occasional lackluster specimens, however, so pick yours at a local nursery during the fall season when you can see how it colors. Red maples are readily available and easy to transplant.

Acer saccharum sugar maple
(75 to 100 ft) x (75 to 100 ft)
Sugar maple prefers slightly colder climates, but it grows fast and well in the Delaware Valley and is a fine addition, particularly in the fall when the leaves turn bright orange. It's intolerant of salt on roads and sidewalks.

Carya ovata shagbark hickory
(75 to 100 ft) x (35 to 50 ft)
Of all the nut trees, this one, with its edible nuts and shaggy bark, is the grandest. It appears to be difficult to transplant and consequently will be hard to find. It has delightful yellow leaves in the fall.

Cladrastis lutea yellowwood
(50 to 75 ft) x (50 to 75 ft)
Yellowwood has smooth bark very like a beech, panicles of white flowers every other spring and interesting compound leaves. Pruning and shaping young trees is important because the branches split and break easily. The finest specimen I know is at Bartram's Garden on the Schuylkill.

Fagus grandiflora (formerly *Americana*) American beech
(75 to 100 ft) x (50 to 75 ft)
This is the predominant tree on the west-facing slopes of the Wissahickon Valley. It's easy to spot by reason of its smooth, almost white bark and light brown autumn leaves, which often remain in place all winter. It's hard to transplant, but gets very big when planted successfully in the open.

Liquidambar styraciflua sweet gum
(75 to 100 ft) x (50 to 75 ft)
It has brilliant red fall color and an almost perfect pyramidal shape; it's easy to transplant and free from insect and disease — a combination that explains its recent popularity for streets, gardens and edge plantings. Its only drawback is the prickly fruit, a nuisance on the ground but great for Christmas ornaments.

Liriodendron tulipifera tulip poplar
(75 to 100 ft) x (35 to 50 ft)
If I could plant but one tree for future owners of our property, it would be a tulip poplar. Fortunately, I can give them a choice of several seedlings that have been overlooked by browsing deer. Mature specimens are straight and tall and have no serious disease problems. They are not easy to transplant; so start with a small one and take good care of it for the first few years.

Nyssa sylvatica sourgum
(50 to 75 ft) x (35 to 50 ft)
Of all our native trees, this has the most brilliant red fall color — and is the most dependable. However, because it's hard to transplant and slow to get established, nurseries don't push it. We should.

Platanus occidentalis
Interchangeably called American sycamore, buttonwood or plane tree
(75 to 100 ft) x (75 to 100 ft)
Generally considered our most massive native tree. The exfoliating bark often makes the trunk of a mature specimen strikingly white. Many years ago, horticulturists crossed the American plane with the Oriental plane, producing the London plane, widely planted as a street tree in the early 20th century. I'd like to see more of the natives. But not along the city streets.

Prunus serotina black cherry
(70 to 100 ft) x (35 to 50 ft)
Furniture made from black cherry is as American as apple pie. The bark is attractive, especially when the tree is young, and in spring the tree is smothered with white flowers. My consultants welcomed it to this list, but don't plant one unless you have a lot of room.

Quercus oak
American oaks are our finest trees. Plant them as legacies for future generations. Some grow to enormous size and most are resistant to serious disease, but, unfortunately, they are favorites of the gypsy moth.

continued

Q. alba white oak
(75 to 100 ft) x (75 to 100 ft)
Mature white oaks are truly mighty, deserving the poet's tribute to "the brave old oak, who hath ruled in the greenwood long." Like many other native trees, they are hard to transplant; so plant yours when it is quite young and tend it carefully for several years.

Q. rubra (formerly *borealis*) red oak
(75 to 100 ft) x (75 to 100 ft)
This is the most popular of the oaks and readily available. Fall color is brilliant, and mature trees are magnificent. Plant it in the spring; it does not do well when planted in the fall.

Q. prinus chestnut oak
(50 to 75 ft) x (75 to 100 ft)
We have a number of these on our property, including a three-trunked specimen that shades our terrace. Many people admire them but are disappointed when they try to buy one. It's the same story: They're hard to transplant, so nurseries are reluctant to grow them. We need to create a demand.

Sassafras albidum sassafras
(35 to 50 ft) x (35 to 50 ft)
One rarely sees a sassafras by itself, though Donald Wyman says that, individually grown, it makes a fine tree. I like it because of its brilliant fall color and the pungent smell of crushed leaves. If you are selecting a species to plant as a grove, sassafras should be high on your list. As usual with the trees in this list, they are hard to transplant, so, you'll have trouble finding them in nurseries.

Ulmus americana American elm
(75 to 100 ft) x (75 to 100 ft)
Most horticulturists would call you crazy if you planted an American elm today because they are so susceptible to Dutch elm disease. But breeders are trying to develop hybrids and cultivars that are immune to the disease, and the American Elm Institute is working on the problem as well. Trees are not usually affected until they are 20 to 25 years old. I remain confident that a resistant strain will be found or a natural enemy of the beetle that spreads the disease will appear, so we may once again enjoy these beautiful natives in our landscape.







Choosing Trees for Your Landscape



by Victoria Steiger Olin

When you pick a tree for your landscape, consider how it will look in the present and in the future. The structure, texture and color trees provide can help organize your residential landscape.

At the foot of the Blue Ridge Mountains, on a farm near the Mason Dixon Line, the Blue Spring Run cuts through a large meadow below a limestone ledge. Next to the stream, in one of the oxbows, grows a gigantic sycamore. The tree and stream are wedded to one another, the tree roots knotting and tying it down along the bank. A ladder of slats nailed into the trunk disappears into the hollow interior, where generations of children have played. Embodied in this mammoth tree is the passage of time. These are the memories and images that motivate us to plant trees, even though the image of them at maturity may never be realized in a life time.

"To plant trees is to give body and life to one's dreams of a better world."

Russell Page, *Education of a Gardener*, p. 173, Random House, New York, 1983.

Large shade trees are the protagonists in the pageantry of the changing seasons. They also provide a structure and framework to the landscape, by making, modulating and occupying space. Before planting a new tree, defining and understanding the role it will play can help to determine an appropriate site selection.

the foreground

In the foreground, near the house, a tree provides shade in summer to outdoor living spaces and filters the harsh sunlight into the interior spaces, yet allows light in during winter. Just as important, from indoors, the quality of light filtered through leaves, elegant branching patterns and ornamental characteristics such as interesting leaf shapes, bark or flowers, become living botanical pictures caught in the window frame. Continuity is provided in the landscape, as the shaded foreground frames the shimmering sunlit landscape beyond. For a site near the house, you want the most from a tree; a single ornamental feature, a week's barrage of bloom in the spring, need not suffice. I would think of a multistemmed katsura tree (*Cercidiphyllum japonicum*), leafing out reddish purple in spring, with lovely bluish-green leaves in summer creating a dappled shade. Best of all, on a fall morning, the golden light through the apricot-colored leaves against a cobalt blue sky would make an east-facing bedroom or breakfast room perfection.

Another good choice for year round interest is the river birch (*Betula nigra*),

continued

Jessica Olin, photographed in the American sycamore where the author remembers playing as a child.

photo by Victoria Steiger Olin

Choosing Trees for Your Landscape

photos by Victoria Steiger Olin

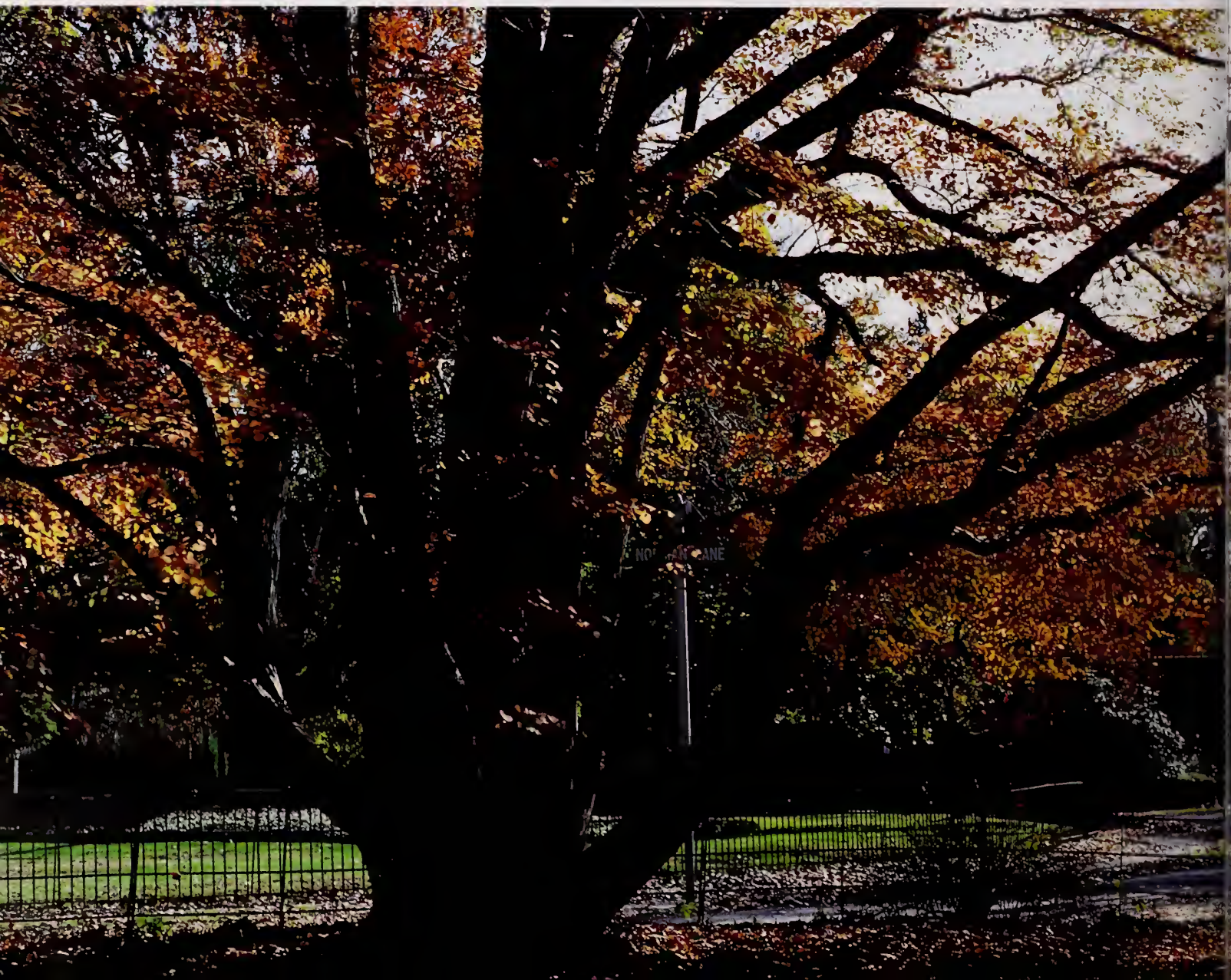


The foliage of the katsura tree (*Cercidiphyllum japonicum*) warms to a golden apricot glow in October. See below.

which has the prettiest bark imaginable. *B. nigra* 'Heritage,' a recent Pennsylvania Horticultural Society Gold Medal selection, is an especially improved cultivar. The outer papery bark is creamy white, the underside of the peeling bark a deeper rusty orange, exposing soft peachy-pink bark beneath. With several stems, its many horizontal, ascending branches end in burgundy-colored twigs, with black smudges where the branches join the trunk. A grove of these native birches near the house, particularly if the soil is acid and moist in the spring, would be lovely.

the middle ground

In the middle ground, trees can be used to frame views, or to reduce the width of a view, suggest greater depth, and give the landscape a sense of space beyond. Harmony of structure between a tree and the



lines of a building can impart an aura of order, proportion, and permanency.

Give special consideration to leaf size, shape, and color in this context: these characteristics contribute to the transparency or opaqueness of the canopy. Coarse, matte-green leaves give bulky mass in the summertime with black pools of shadow below. You need a little distance to appreciate some coarse-textured trees, like the opulent effect of a horse chestnut in bloom, the panicles lighting up the emerald-green leaves. The red horse chestnut (*Aesculus x carnea* 'Briotii') has deep red panicles almost 10 in. long, and the foliage stays green through September. The nuts are fun for children to collect.

In mid-summer, when we grow bored with all the green, trees with fine-textured leaves of a grey or bluish cast, like white oaks, or with grey-backed leaves like silver

lindens (*Tilia tomentosa*) and sweet bay magnolia (*Magnolia virginiana*), when stirred by a breeze seem to billow and wave. The shiny lustrous surfaces of the leaves of the red oak (*Quercus rubra*) add sparkle and shine.

the background: evaluate the boundaries

Sometimes in the background, beyond the property line, you can draw marvelous specimen plantings, natural woodlands or handsome architectural features into your garden's composition and make them your own. The careful selection and placement of trees flanking this focus can blur the edges and borrow these landscape elements for your garden. Compatibility and continuity with the appropriated landscape should govern the species you select.

On the other hand, when the boundaries

understory, shrub and ground cover layer should complement the main character.

Say you choose yellowwood (*Cladrastis lutea*) and underplant it with the evergreen *Sarcococca hookerana humilis*, to show off the beautiful grey, beechlike bark. The yellow-green spring foliage would go well with lots of blue and white wind flowers (*Anemone blanda*), the wild blue phlox (*Phlox divaricata*), and pale yellow narcissus. In late May and early June, when cascading panicles of white flowers appear, you'd want to sit or walk nearby and smell the fragrance, among blue and white columbines, ferns, hostas with white edges or variegated Solomon's seal (*Polygonatum odoratum thunbergii*). Come fall, the clear yellow color of the foliage would seem lit from within, when backed up by some ruddy, bronze red oak foliage.

Because a shade tree creates its own planting environment, that environment changes as the tree matures. Space seems to expand beneath the canopy.

a checklist: anticipate the problems that can come with maturity

Before you plant a new tree you need to know how big it's going to get. How far should the trunk be kept from buildings and structures? Retaining walls will bulge and collapse, pavements heave, iron picket fences will be eaten by voracious sycamores, drains clogged and utility lines rendered inaccessible without causing extensive root damage, unless you plan ahead. As the root system expands and becomes more competitive, regular fertilization of the planting beneath the canopy will become more important. These changes will be gradual and I hope not a surprise, for in selecting the tree in the first place, you will have considered its eventual canopy size and the approximate extent of the roots.

A tree in the wild and one in cultivation vary greatly in size. Visiting a nearby arboretum is often a good way to start, because there you may see several specimens of the tree you are interested in at different stages of development.

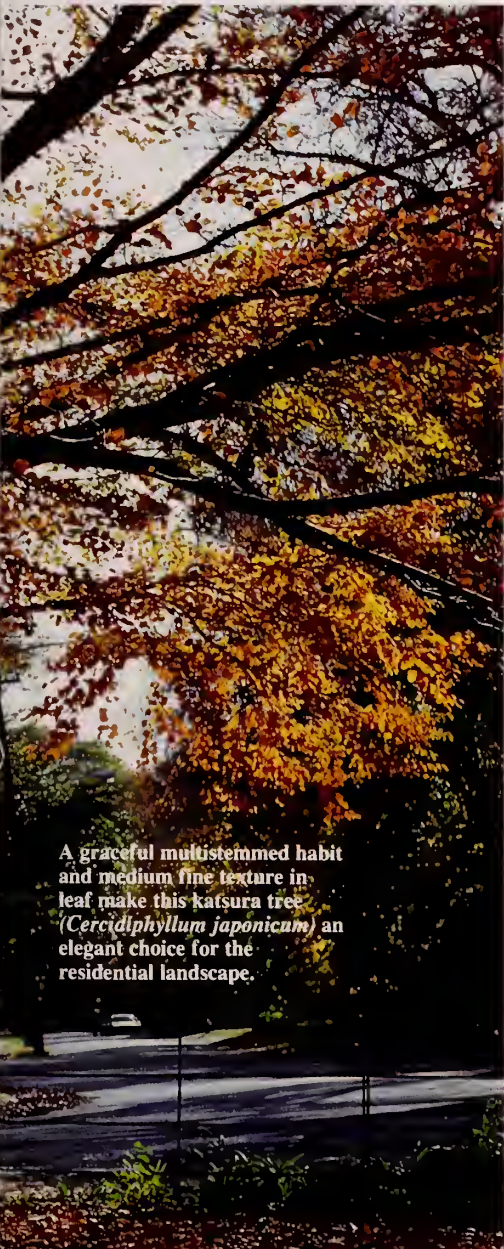
Trees come to play leading roles over the long term more frequently than we perhaps intend. This is a major problem for people living in older residential communities, where many large trees are becoming senescent (old). When an old tree has to come down, an entire garden scheme can be thrown out of kilter. It's best to plant an understudy, if there's room, to compensate for the impending loss of balance and shade.

Memorable landscapes are often the-
continued

Purple leaf flowering plum (*Prunus cerasifera* 'Thundercloud') and the Norway maple (*Acer platanoides* 'Crimson King') are the equivalent of a black hole in space. A great deal of effort must be expended on companion plantings in special foliage color schemes to make these plants feel at home.

of a garden are well defined, and you wish to emphasize the sense of enclosure, a specimen shade tree planted within can become the nucleus of the garden scheme, from which the rest of the garden radiates. On older sites, with an existing mature tree already in the middle of things, often you have no other choice. All future decisions will arise from a need to complement and enhance the essential features of the new tree. And not just any tree will do, since the long-term health and vigor of the tree will become something of an obsession.

Here most people will have difficulty making up their minds. What mood do you want to evoke? Somehow the character of the place should be personified. A tree that will develop a massive trunk and a few muscular limbs will give a bold confrontational effect, a feeling of power and strength. Or perhaps delicacy and refinement are in order. The instead of the mighty oak, you choose a Chinese elm (*Ulmus parvifolia*) with airy, arching, slightly pendulous branches, and lovely bark mottled grey, green, apricot and brown. In any case, the new tree creates its own planting environment, and companion plantings in the



A graceful multistemmed habit and medium fine texture in leaf make this katsura tree (*Cercidiphyllum japonicum*) an elegant choice for the residential landscape.



The native river birch (*Betula nigra*), photographed along Lincoln Drive at the Cresheim Valley Bridge in Philadelphia. Longer lived than most birches, it reaches 40 to 60 ft. in height and spread. The recent Pennsylvania Horticultural Society Gold Medal winner *B. nigra* 'Heritage' offers the additional advantage of being heat tolerant and consequently resistant to birch borer.

Care of Newly Planted Trees

To ensure new trees get a good start, given them special attention for two or three years after planting. Water during droughty periods. Give the tree a good soaking, and make sure the water is not just running off. To help conserve moisture, keep a layer of mulch 2-3 in. deep around the tree, well away from the trunk so the trunk and root collar are exposed.

Protect the tree from damage by lawn mowers and from rodents who may gnaw or burrow around the trunk and root ball. Stake a single stem tree to aid in the development of a straight leader.

Prune annually to encourage proper structural growth, and in multistemmed trees to eliminate crossed branches and let light into the interior.

Weed regularly to limit competition for nutrients and water. Set up an annual fertilization program. A healthy tree will be better able to withstand pest infestation and disease. Check the surfaces and undersides of leaves and stems for signs of insects. Yellowing leaves, browning leaf edges, and smaller than normal leaves may all indicate problems.

12

matically about something: an underlying expression on site of an inherited past, of land uses or planting environment. We can look for clues in the landscape around us, whether rural, suburban or urban, to both ensure long-term survival and to give the appearance of appropriateness and belonging. Shallow and infertile soils, high pH, droughty or waterlogged soils and urban pollution immediately limit the list of trees from which we can select. Here a little research is in order. Look for a candidate nearby. See which trees flourish and which struggle in the neighborhood.

Bronze and purple foliage trees are often used inappropriately. They just don't fit or belong in the surrounding landscape, where the dark greens of oaks and maples or the grey-greens of locusts and white pines predominate. Purple leaf flowering plum (*Prunus cerasifera* 'Thundercloud') and the Norway maple (*Acer platanoides* 'Crimson King') are the equivalent of a black hole in space. A great deal of effort must be expended on companion plantings in special

foliage color schemes to make these plants feel at home.

diverse plantings

Maintaining a diverse community of trees is the best guardian against the wholesale destruction of trees in a region by disease or insect pests. Our personal prejudice should not deny the possibility that every species may have its appropriate place and use; however, some species are frequently used inappropriately. For example, in many communities such as my own hometown, where large shade trees have been lost to age or disease, new plantings of the Callery pear (*Pyrus calleryana* 'Bradford') will never attain the height and mass of the lost avenues of trees. Other trees can become outright scourges; e.g. the fast-growing, weak-wooded Norway maple (*Acer platanoides*), whose heavy oppressive shade and competitive, poisonous root system prevents the germination of other native trees. A desert of hard, barren ground spreads inexorably beneath its canopy, and it seeds

itself everywhere. There is no good reason for planting this tree.

One criterion most frequently stated by clients as important to them is rapid growth. We are aware of the years it will take for a shade tree to reach maturity. We are too anxious for quick results. We're making an investment, and we have the unsettling feeling that we won't be around for the payoff. Yet the trait of rapid growth is more often than not synonymous with short-lived, weak-wooded trees with invasive root systems and prolific reproduction. It's better to plant the tree that gives the requisite qualities of form, texture and color in the landscape scheme, no matter how slow growing. The truth is that what is splendid about a mature oak or beech tree may not be realized in a lifetime. We must learn how to take pleasure in progress.




Victoria Steiger Olin is a partner in the Philadelphia firm of Shusterman and Steiger Landscape Architects.



SOME TREES FOR SMALL GARDENS

 by Julie Morris



I have gardened in small spaces for more than 30 years. Woody and herbaceous plants in containers were the mainstays of my first apartment gardens, and some of the lessons I learned from growing plants in confined spaces helped me when I planned each of the three gardens I've made in the ensuing years. In addition, knowing how to prune to help nature along as I adapted a plant to a certain space has been a great boon.

We were taught pruning at school, but my "eye" for pruning didn't really develop until Ernesta and Fred Ballard taught me how to prune bonsai during the years I worked for Ernesta at Valley Gardens in Chestnut Hill, Pa. Fred Ballard was a great teacher who patiently showed me how to stop creating "broomheads" on all the would-be bonsai I pruned. I practiced on my woody houseplants and still have the first indoor tree I bought from Ernesta 30 years ago.

Japanese flowering crabapple

The Japanese flowering crabapple, *Malus floribunda*, is my favorite small tree. It is also the first tree I ever bought. In 1963, I purchased a 4 ft. *Malus floribunda* from the old Bloodgood Nursery in Spring House,

continued

The Japanese flowering crabapple photographed in Newport, Rhode Island in 1982 was purchased when it was 4 ft. high in 1963 in Spring House, Pennsylvania. It was moved to Newport 13 years later. Now 15 ft. tall, its 25 ft. wide canopy shades a small terraced seating area.

photo by Jackie Denning

SOME TREES FOR SMALL GARDENS

Pa., and grew it in a whiskey barrel for 13 years. Every three or four years the barrel would fall apart so I would root prune and remove a proportionate amount of top growth and replant the tree in a new barrel. The root pruning was always done just as the buds began to swell in early spring but before new growth started.

The Japanese flowering crabapple seems to be the tree that other crabapples are judged against. It can grow to 25 ft. and has very dense branches so responds well to pruning. The buds are deep pink. They open to a lighter pink and fade to almost white. The tree is glorious in full bloom. The small yellow to red fruit that decorate the tree in autumn are usually gobbled up by bluejays in one or two days late in the season. My tree never developed any of the diseases common to crabapples such as scab or fireblight.

When I moved from Philadelphia to Newport, Rhode Island, in 1976, the crabapple went with me. It was the first plant to go into my new garden. Once in the ground, it took off and has now grown to 15 ft. tall with a 25-ft.-wide canopy that shades a small terraced sitting area.

Over the years, I added almost a dozen more trees to the property, which was all of 6,000 square feet. Even so, it felt like an estate after the 400 square feet of garden I'd had in Chestnut Hill, Pa. Some trees were mistakes, like the grove of three white pines that quickly grew too big; two of the trees were given away in short order. Most of the other trees proved to have been good choices and that is very satisfying as they are among my favorite plants. I chose trees that had more than one season of interest, had fragrant flowers, or some other outstanding feature such as good autumn color or exfoliating bark.

Making a new garden coincided with starting a new garden design and maintenance business. My partner, Jackie Denning, and I worked in a number of small and large gardens in Newport, dealt with several nurseries and did a lot of plant watching to see just which trees we wanted for our own garden.

Several books were also helpful. William Frederick's *100 Great Garden Plants* (Alfred A. Knopf, NY, 1975) had just been published (it has since been revised and published in a new edition), and the section on small trees was very helpful, except that I wanted everything I read about. The chapter on small trees in the late Isabel Zucker's *Flowering Shrubs and Small Trees**

*Isabel Zucker's *Flowering Shrubs and Small Trees*, revised, and photographed by Derek Fell, Grove Weidenfeld, NY, 1990.

was equally inspiring. Both writers grew what they wrote about and offered sound suggestions.

amelanchiers

Spring begins in my garden when the shadbush, *Amelanchier arborea*, blooms in mid- to late April. The amelanchier's airy white flowers last only a week or so, but they signal the start of a succession of bloom that will last well into June. The shadbush can grow to 25 ft., but 15 ft. is more usual. It is a slender tree (can also be multi-stemmed) with a rounded crown. The plant in my garden came in the mail and grew rapidly to landscape size in only a few years. The autumn color is a striking apricot-orange. The fruit changes from

In a small garden, everything happens close-up or at once. It is hard to create vistas or surprises around corners, so it is important to use the interplay of light and shadow and different textures in foliage, bark or construction materials to create interest and the illusion of space or distance.

green to red to black in the summer, and the birds favor it. The *Amelanchier canadensis*, shadblow serviceberry, is more shrub-like because of sucker growth but equally lovely in flower and fall color. My plant blooms about one week after the *Amelanchier arborea*.

cornelian cherry dogwood

Cornus mas, cornelian cherry dogwood, is not in my garden but is a much neglected member of the dogwood family. It blooms in late March or very early April. The small yellow flowers cover the tree often at a time when nothing else is in bloom. The flowers are followed by glossy dark green leaves and red fruit or drupes. If the birds don't beat you to them, the cherry red drupes make excellent jelly.

We overlook the *Cornus mas* as a tree with great landscape value because of its showier relatives; we should use it more. The tree has a pleasing, rounded habit and can be single or multi-stemmed. Both *Cornus mas* and the amelanchier grow in sun or partial shade.

Daphne 'Carol Mackie'

As the confetti-like flowers of the amelanchier fall and are blown about by the spring winds, the buds of the Japanese flowering crabapple start to open. The tree is usually in full bloom sometime during

the first two weeks of May. The crabapple blooms about the same time as the shrub *Daphne x burkwoodii* 'Carol Mackie.' This daphne has lovely fragrant, light pink flowers, and the leaves have a cream edge that give the plant a "3-D" look. Growing to about 3 ft., it is a good companion to the Japanese crabapple. My plant grew in a raised bed near the flowering crab.

white fringe tree

After reading Bill Frederick's book, I knew I wanted a white fringetree, (*Chionanthus virginicus*). It's an American native, like the *Cornus mas* and amelanchier species. Its lovely, long panicles of white, frilly fringe flowers appear in late May into early June, about the same time as the leaves are almost fully open. The leaves are 3 in. - 8 in. long and a lustrous dark green. They also take forever to appear, coming after most of the other trees have leafed out. Large, dark blue drupes can persist into the autumn but usually the birds eat them first.

The trees are dioecious, having male and female flowers on separate plants, or polygamo-dioecious, which means they have perfect flowers as well as male or female flowers on separate plants. The male flowers are a bit showier so a male plant may be the best to choose. The fringetrees prefer a deep, moist, slightly acid soil, but mine grows well in what was once a rubble-filled lot with underpinnings of old buildings.

Good soil preparation and adding loads of organic matter to the all-important hole are well worthwhile. *Chionanthus* are slow growing and usually reach from 12 ft. - 20 ft. in the garden. The trees have a spreading habit and are often wider than they are high.

sweet bay magnolia

Another native tree in my garden follows the fringetree into bloom. It is the sweet bay magnolia, *Magnolia virginiana*. I planted it near the back door so I could enjoy the fragrant flowers that bloom in semi-profusion in June and more spottily during the rest of the season. The sweet bay is not as prolific a bloomer as the star magnolia or some of the earlier species, but it flowers at a time when we are apt to be working or sitting in the garden, and its lemony fragrance can be enjoyed both day and night.

The tree grows to about 20 ft. - 30 ft. in the Philadelphia area and 10 ft. - 20 ft. in New England where it will grow to Zone 5. The leaves are a lustrous mid-green with glaucous undersides. The trees are semi-evergreen, holding their leaves usually until



Top left: Shadbush's airy white flowers dazzle us in mid-April. **Top right:** *Cornus mas*, Cornelian cherry dogwood. **Bottom left:** *Chionanthus virginicus*, white fringetree. **Bottom right:** *Magnolia virginiana* in a small back garden.

Christmas. There are some new cultivars that are evergreen, but they are difficult to propagate and are not yet widely available. Every now and then, the magnolia will send out long shoots at odd angles. I prune these branches off or back to keep the shape I want the tree to have. The *Magnolia virginiana* tolerates moist soil and, like all the trees mentioned so far, prefers slightly acid soil.

Japanese snowbell

Styrax japonicus, the Japanese snowbell,

blooms in late spring, grows in full sun or partial shade, and thrives in a rich, acid soil. Having said this, I should add that my styrax grew perfectly well in the shade and among the roots of a neighbor's Norway maple. It is a real lime hater, so don't plant it where you might be adding any to the soil.

The styrax is a dainty, well-branched tree, which grows to 20 ft. - 30 ft. The tree has wide-spreading branches and handsome gray bark with interesting orange-brown fissures. The flowers are white and

bell-like and cover the tree, blooming for about three weeks from late May into June. Greenish-gray drupes follow the flowers. I remember my teacher, James Bush-Brown, talking about the drupes and how they looked like small footballs. The fruit lasts until November when it falls off.

American yellowwood

In a small garden, everything happens close-up or at once. It is hard to create vistas or surprises around corners, so it is important to use the interplay of light and

continued

shadow and different textures in foliage, bark or construction materials to create interest and the illusion of space or distance. Three trees in addition to those already mentioned completed the framework of the garden: an American yellowwood, a cutleaf maple and a paperbark maple.

Jackie Denning and I had planted an American yellowwood, *Cladrastis lutea*, for a garden client and we admired its spreading habit and bright green compound leaves. It's a medium-sized tree that can grow to 50 ft., but most of the plants I've seen are between 25 ft. - 40 ft. A fine shade tree for smaller properties with an umbrella-like canopy, it's not fussy about pH and will grow in alkaline or acid soils. Again I can thank Bill Frederick for his book, which introduced me to the delights of this tree that I'd only seen growing in one or two gardens. The yellowwood has 12-in.-long panicles of fragrant white flowers, produced in early June every two or three years. The bark is smooth and gray, and we planted the tree where I could see it from a kitchen window. The leaves and branch patterns created lively shadows, and I loved looking into it over the years as it gradually stretched over the kitchen roof.

The gardens of Pennsylvania Horticultural Society members Joanna Reed and the late Emily Cheston taught me a lot about where to place plants so they could be enjoyed from indoors as well as outdoors. I remember Mrs. Cheston telling me to spend a lot of time looking out of my windows before planting anything. The exercise proved fruitful. From various spots indoors I could see the amelanchier's buds shimmer in the later winter sun and see the plant bloom and admire the autumn gold of its foliage. From several windows, I would glimpse the crabapple, and from my desk I could look out on several trees and the rest of my garden.

cutleaf Japanese maple

My garden may not have held many surprises, but my using containers, raised beds and vines on an arbor and fence, we created different levels and surfaces. The cutleaf Japanese maple, *Acer palmatum* 'Dissectum Atropurpureum,' made one of these transition areas more interesting. Growing between the terrace and herb garden, the tree was low enough to be admired from above. It was grown for some years in a pot. When we planted the tree, it was about 30 in. tall and 3 ft. across. The gnarled branch pattern and spreading shape were perfectly suited for its location

photo by Jackie Denning



Acer palmatum 'Dissectum Atropurpureum.'

next to a small pool. This maple is lovely year-round. The branch structure shows off beautifully in winter. It's really lovely while still in bud just before the leaves open, and the autumn color is a stunning dark orange color.

paperbark maple

The paperbark maple, *Acer griseum*, is the final member of the trio. It was about 30 in. tall when planted in 1978 and has grown to about 12 ft. in the years since. The tree will eventually reach 20 ft. - 30 ft. The small trifoliate leaves 3 in. - 6 in. long come out quite late, appearing after other maples. The tree has a rounded habit and striking cinnamon-colored bark. As the branches mature, the bark exfoliates to show off the gleaming red-brown colors beneath. The leaves are a brilliant red-purple in the autumn and often stay on the tree into November.

a move to a new space

Nearly two years ago I moved to a small 19th century house with a tiny but totally empty garden space in Bristol, Rhode Island. My new garden is evolving as I once again peer out windows trying to decide what I want to see from my various perches in the house. Leaving the crabapple was harder than leaving the house in Newport. This time I couldn't cut it back and take it

PLANT LIST

In order in which they appear in this article.

Japanese flowering crabapple
Malus floribunda
Shadbush
Amelanchier arborea
Shadblow serviceberry
Amelanchier canadensis
Cornelian cherry dogwood
Cornus mas
Daphne
Daphne x burkwoodii
'Carol Mackie'
White fringetree
Chionanthus virginicus
Sweet bay magnolia
Magnolia virginiana
Japanese snowbell
Styrax japonicus
American yellowwood
Cladrastis lutea
Cutleaf Japanese maple
Acer palmatum 'Dissectum
Atropurpureum'
Paperbark maple
Acer griseum

with me. Ever the optimistic gardener, however, I've planted a new *Malus floribunda*, a present from a friend. An arborist moved the *Acer griseum*, which has settled in with little die-back. In addition I've added two new sweet bay magnolias, with plans for another this year.

One of my three amelanchiers moved to Bristol with me, and I have a new 2-ft.-tall *Chionanthus* to plant. All this and more to come in a 2,000-square-foot space including house and garage. The Japanese maple was moved to Jackie's town garden in Providence.

Gardening, it has been said, is the art of the possible. Perhaps nowhere is this art put to a greater test than in a small garden where the temptation to want one of everything must be tempered with at least an ounce of practicality. Even a brief glance at any one of the fine gardening books available today will reveal the long lists of plants suitable for small spaces. Visit nurseries and other people's gardens and take time to gaze out your own windows, and it won't take long to find which plants should be in your own small garden.

Julie Morris is the horticulturist for Blithewold Gardens and Arboretum in Bristol, Rhode Island, where she has worked for the past 12 years. Two years ago she moved from Newport to Bristol where she started a new garden next to her 100-year-old house. Julie is a former staff member of the Pennsylvania Horticultural Society.



ROOTS-

WHAT HAPPENS UNDERGROUND

How to Protect Your Trees' Roots

 by Joanne Miller

A tree's root system is for the most part underground and out of sight. The roots' function remain a mystery to many people. Roots not only anchor a tree into the earth, they also absorb and transport water, air, nutrients, and are a complex food storage area for the remainder of the tree.

Contrary to many beliefs, all roots do not grow straight down. Some trees, more than others, have roots that go straight down: these are called tap roots. Black walnut (*Juglans nigra*) grow tap roots. By growing straight down, the tap root adds stability to the rest of the tree. All trees, including those with tap roots, also have lateral roots that grow horizontally and are in the top

three to four feet of soil, depending on the soil conditions. The lateral roots also provide support. The smaller feeder roots that absorb air, water and nutrients are usually in the top six inches of soil, especially if this area is protected by mulch or leaf litter and is not tilled or cultivated. This protected soil area is most favorable for root growth.

mulching

In a landscape setting, a tree should be properly mulched. Three to four inches of mulch placed around the tree's base and slightly away from the trunk is ideal. This mulched area, when under an individual tree, is normally defined as a "tree well" and can be of any size. Keep in mind though, it should be proportionate to the tree's

size. For example: a 2-in.-diameter tree only needs a 2-3 ft. diameter mulched tree well, whereas a 10 in. diameter tree will need a substantially larger tree well, approximately six to 10 ft. in diameter. A mulched tree well protects the roots below, as well as the trunk of the tree. Some of the benefits are: the soil's temperature fluctuates less where the feeder roots are located; less direct exposure to the sun and wind, and reduced moisture evaporation.

The mulch keeps foot and vehicle traffic away from the tender absorption roots, which help to retain good aeration, by decreasing compaction. The mulch well also protects the trunk from mower and weed trimmer damage. It's important that the mulch neither be excessive nor high on the trunk. When mounded too high, you risk water run off, away from the tree's absorbing roots. Excessive mounding can suffocate roots buried too deeply.

If the area is wet and retains water, the soil will not dry
continued

Lateral tree roots that grow horizontally are in the top three to four feet of soil.

photo by Joanne Miller

ROOTS

out sufficiently and can drown or suffocate the roots and lead to the tree's decline.

Trees incorporated into a shrub bed will not need a tree well. The entire planting area should be mulched following the above recommendations.

Trees growing in a woodland do not need to be mulched if the leaf litter is left under the tree. The litter naturally provides the same protection as mulch, and in time will break down to provide nutrients for the tree.

trees in restricted areas

Tree roots in an open area can extend three times the radius of the crown. They grow great distances to obtain fertile soil and adequate moisture. Of course, in a restricted area or container, tree roots are confined and not able to grow to find needed water and nutrients. These trees require more help to stay alive: more frequent irrigating and fertilizing, and close monitoring for girdling roots.

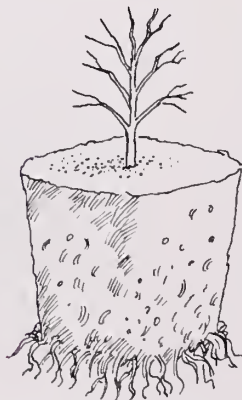
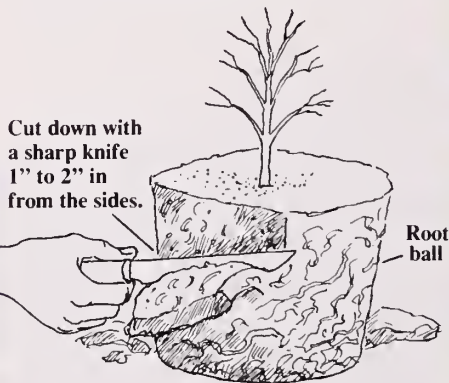
A girdling root is a root that may have grown around another root or trunk of the tree under or above ground; it eventually constricts the water, air and nutrients that the root supplies to the rest of the tree. If major roots are involved, the entire tree will gradually die from lack of air, moisture and nutrients.

Many times a container-grown tree that we buy can have girdling roots. If the tree has been in the container for a long time, the roots will start circling the inside of the

container. As the roots grow and circle around inside the container, one root can cross over another or around the base of the trunk. When it's time to plant this container-grown tree, separate the roots; be sure they are not tangled over one another. Wash the soil from around the roots to better inspect them. This can be time consuming and may be detrimental to the plant.

The best way I have found to reduce the risk of girdling roots when planting a container-grown tree is to slice the roots vertically on the outside of the ball. First remove the tree from the container and with a "sharp" knife, cut down through the roots on all four sides of the ball penetrating into the root mass approximately 1 in. - 2 ins. This will sever any roots that have started circling the container. Then, slightly pull at the base of these slices to loosen and separate the roots so they tend to grow directly away from the main stem or trunk. The prepared planting hole can also influence the root system and may help eliminate girdling roots. The planting hole should be slightly larger than the root ball and the soil beyond the hole should be loose enough to

Reduce risk of girdling roots when planting a container-grown tree.



Slightly pull and loosen roots at the base of the slices.

let the roots grow into it, rather than circling the planting hole.

If a tree already growing at a site starts to show decline on a specific section of top growth, girdling roots may be the cause. Look at the way the base of the tree enters the earth. When the trunk of a tree enters the earth, there should be a natural flare; if one area of the trunk enters straight down with a slight depression or flat side, chances are there's a girdling root (see photos). This root has grown against the trunk of the tree or over a major lateral root. To inspect the roots, start digging carefully where the trunk has entered the ground, where there is no flare. If you don't want to take these next steps, consult a professional arborist, otherwise after locating the girdling root, use a sharp chisel and a mallet to remove the section of root that has grown over the trunk or root. That will alleviate the pressure on the trunk or the root that has been girdled and will enable it to continue to



A girdling root has grown around the trunk above ground, eventually constricting access to water, air and nutrients.



Above: A natural flare as the base of the tree enters the earth. Below: If the trunk enters the ground cylindrical-like without a flare, there may be a problem, e.g. a girdling root. This tree was backfilled with several feet of soil.



A tree should be properly mulched: three to four inches of mulch placed around the base of the tree, and slightly away from the trunk. When mulch is excessive or mounded high on the trunk, there's a risk of water run off, and roots below may be suffocated.

absorb and translocate air, water and nutrients to the rest of the tree.

backfilling with soil and changing grades

Besides being mulched excessively and having girdling roots, tree roots can also suffocate and eventually kill the tree if the roots have been backfilled with too much soil or if the tree was planted too deep to begin with. Either of these problems are signalled by the general decline of the entire crown. Also look at the flare of the trunk as it enters the earth. If the entire trunk enters the ground cylindrically and with no flare, there may be a problem. It could be that at one time for one reason or another, the tree was backfilled.

If at all possible, never change the existing grade around a tree. If the ground level around trees is either raised or lowered, roots will be denied their normal supply of air, water and nutrients. When the level of the earth must be raised, thousands of feeder roots can suffocate. When lowering the ground level, thousands of feeder and support roots will be removed, cutting off supply lines to the rest of the tree and also greatly increasing the tree's chances of being blown over from lack of anchoring roots.

to raise soil level around a tree

When the level of the earth must be raised, place a retaining wall around the

tree, at least three feet from the trunk, and if possible out along the drip line. This wall will keep the new soil level off the feeder roots so they may continue their work. The closer the walls are to the trunk of the tree, the more roots will be damaged and more precautions must be taken.

When installing retaining walls, place a series of perforated pipes behind them, laid horizontally, on the original grade with holes facing downward, leading away from the trunk. These pipes are joined together and then connected to a vertical pipe that extends up to the new soil level. Cover the open ends of the pipes with wire mesh to keep these lines clear of soil and to allow air and water to pass through the pipes to get to the roots.

On top of this network of connecting pipes lay coarse gravel, then soil to raise the grade to the new level desired. These precautions will allow air and moisture to easily penetrate down to the roots. The vertical pipe that is accessible from the surface of the new soil level will enable supplemental watering with a hose and feeding with a water-soluble fertilizer. Make sure water does not collect around the base of the tree in the walled-off tree well; puddling can lead to butt rot and suffocate the roots you are trying to save by installing the retaining wall.

to lower soil level around a tree

To lower soil level, carefully cut away,

the earth and roots to the new level you want. Cut back any damaged roots over two inches in diameter to uninjured tissue and until the wall is built, cover with damp burlap to keep these roots from drying out. Protect and preserve as many roots as possible, by keeping away from the trunk and the drip line. A retaining wall should be built to hold back the roots from the new lowered soil level. To encourage new root growth, fill behind the wall with good organic soil. The wall will need small drainage holes or pipes to allow water to escape from behind the wall and away from the tree roots. To compensate for the root loss, prune the top portion of the tree and fertilize to encourage new root growth.

If considering any grade change, weigh the expense of keeping the existing trees alive. Consider how long they will survive. Measure the costs against installing new trees. Consult a professional arborist and landscaper about the options.

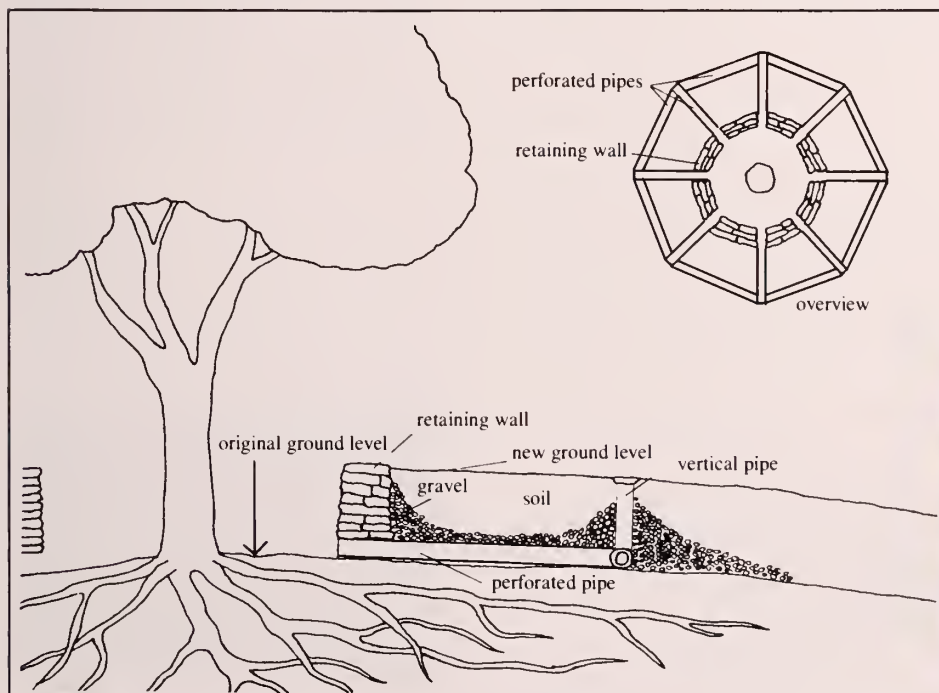
planting a new tree

If you decide to plant new trees, consider the roots: do not suffocate them and look out for girdling roots. When planting a tree, always plant it higher than the depth at which it was originally grown. I prefer to plant a new tree with one-third of the root ball above the existing grade. During the first week the tree will settle down a little as the air and space in the soil used to backfill the planting hole compresses. Planting high also gives space to add mulch and will not bury the roots more than necessary.

construction sites

Before construction begins, the site and existing plants must be evaluated. Often new homes and offices are built on a woodland setting. When excavation begins the soil, if not hauled away, is usually spread over the existing terrain, covering tree roots with extra soil. The new building

continued



To raise soil level around a tree. When you must raise the level of the soil, place a retaining wall around the tree. This wall will keep the new level of soil off the feeder roots. Place a series of perforated pipes behind the retaining wall. These pipes are joined together and then connected to a vertical pipe that extends up to the new soil level. On top of this network of connecting pipes, first a coarse gravel is laid; then soil to raise the grade to the newly desired level. **Overview:** Perforated pipes laid horizontally on the original grade, leading away from the trunk. The pipes are joined together.



ROOTS

looks great with large existing trees growing on the property, but how long will tree roots survive when suffocated by the extra soil placed on top of them.

Some precautions can protect tree roots during construction. Some trees will have to be removed to make space for the new structure and some will have to be removed to allow the building equipment and supplies to move around.

Carefully select healthy specimen trees to remain with proper spacing to enhance the building and still allow sunlight to reach the structure. Established healthy growing trees add an aesthetic value to the location, increase property value, provide shade for cooling and protection from the wind.

The trees selected to remain at the site should have a fence built around them before construction begins: to protect the trunk from being struck and damaged by vehicles and to protect the roots from heavy equipment being driven over them. The weight of such equipment can compress the soil making water and air unavailable to the roots; it can also injure the roots.

Locate stored building supplies away from the tree roots so the weight will not suffocate or injure the roots and so spills will not affect absorbing roots. The fence should cover as wide an area as possible, at least to the outermost branches. Tree roots and branches are also susceptible to injury from the fires that workmen start at construction sites. After the building is completed, the

trees will need careful pruning and fertilizing to develop new root growth, to better adapt to their new surroundings.

digging trenches near roots

Roots can also be damaged and injured when mechanical trenching takes place to install underground cable TV and utilities. If trenches must be dug near trees, keep at least three feet from the trunk and past the drip line if possible. If during mechanical digging you encounter roots over two inches in diameter, start careful hand digging. If the roots are damaged, cut the roots back to healthy tissue and until the trench can be backfilled, keep these roots moist, out of direct sunlight and protected from drying winds. Placing a moist piece of burlap over the trench is helpful.

If major roots are in the way when laying a trench, use a power soil auger, drilling horizontally below the root zone to minimize root damage. Dig a trench on both sides of the tree and then run the soil auger under the major roots to connect the two tunnels. The damage a soil auger will do to roots is minimal compared to mechanical trenching. Remember that most tree roots are in the top three feet of soil so a soil auger should go below that.

When roots are damaged, prune the top portion of the tree to compensate. Use a liquid fertilizer, high in phosphorous, injected into the ground to encourage new root growth. Water well during the growing season to help the newly developing roots survive.



photos by Joanne Miller

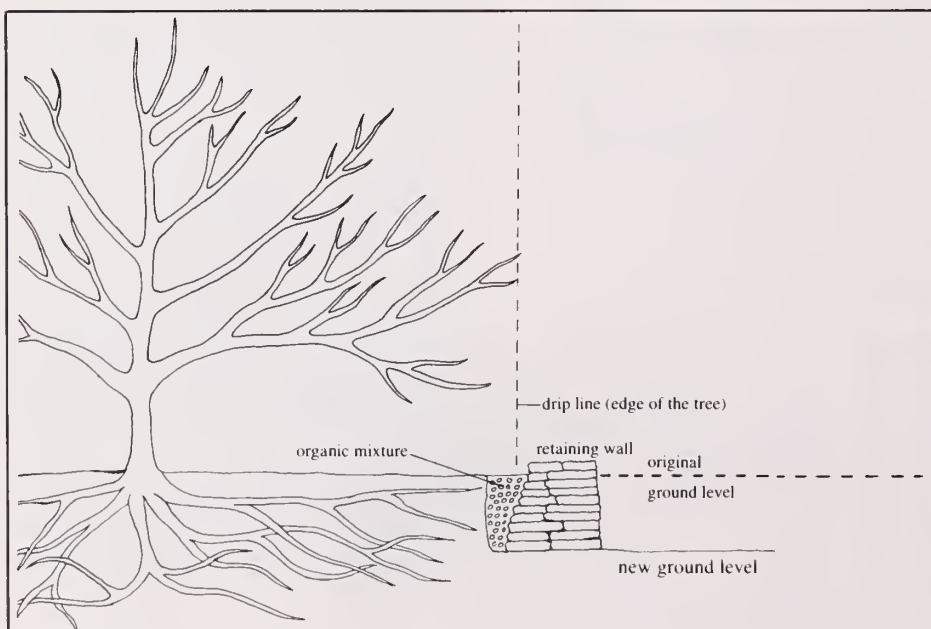
A surface over a tree's root zone should be kept from touching the trunk, and allow for the trunk's expansion. Some of these bricks should have been removed before the trunk grew into and over them.

patios

Roots may also suffocate when a patio is built on top of a root system. With good planning, the tree roots will still survive and the tree's shade can be used. Do not lay an impenetrable surface over the roots such as concrete or flagstone set in mortar. Make the patio of bricks or flagstone laid in a bed of sand; leave gaps between the stones to allow air and water to penetrate down to the roots and allow liquid fertilizer to be injected as needed. Keep this new grade level on the roots to a minimal height. Keep the new surface over the root zone from touching the trunk and leave space for the trunk to expand with age.

I've touched on only a few of the many environmental facets encountered by the complex network of a tree's root system. The health and well being of the tree's crown indicates what is happening underground. We, as caretakers of trees, need to watch for clues above ground to tell us about the health and vigor of the roots underground. While all roots perform the same duties of absorbing and anchoring, no matter what species of tree, each root system should be considered individually in relation to its specific environment. Roots are a mystery because they are out of sight, but they should never be out of mind.

Joanne Miller graduated from Temple University, Ambler Campus with a degree in Horticulture. She is a part-owner of Horticultural Services, a business that operates primarily in Society Hill, Philadelphia, specializing in all phases of city gardens' grounds maintenance and historic grounds maintenance.



To lower soil level around a tree. When you must lower the soil around a tree, build a retaining wall to hold back the roots from the newly lowered soil level. Fill in behind the wall with a good organic soil to help encourage new root growth.

PRUNING: THE MIRACLE OF ORDER



 by Hal Rosner

Spring break 1970. I'm 16 years old, skinny and bewildered. From a backyard in Des Plaines, Illinois, I drag armsful of red-twigged dogwood across a front lawn to load on a stakebed truck. My arms, covered with scratch marks and stinging from perspiration, are flecked with sticky black tree paint.

It's my first day working for my grandfather's tree company. I'm the boss's grandson and the work crew keeps their distance. Occasionally they offer sarcastic encouragement. In my mind the question burns: why are we doing this? Why climb trees? Why cut branches and stems, suckers and sprouts? Why prune?

beauty versus health

The cultivated tree needs informed gardeners and horticulturists to keep it healthy. In the garden we ask it to grow beyond its lifespan. We groom it, and place constraints in a fashion beyond its natural tendencies.

Pruning tasks range from snipping dead stems from a dwarf Japanese maple to removing large limbs on a 110-foot oak; these tasks pose a series of challenges and decisions. We horticulturists are practitioners of an applied science. But when we prune we must balance plant physiology with an aesthetically pleasing result. In our own garden, tending to our beloved trees, we must consider: will this be good for the plant, and will it look good when I'm done?

Bob Gutowski, curator for interpretation at the Morris Arboretum of the University of Pennsylvania, notes that in pruning trees, aesthetics and other concerns (such as fear, loathing, and liability) may often win out over physiology and tree health. "What we often see is a concern for how the tree looks and what it's capable of rather than if the pruning we just did was actually good for the tree."

"The results," notes Gutowski, "are that many trees are radically trimmed or sheared to accommodate a space they're not suited for."

reasons to prune

Cultivating woody ornamentals by pruning (and other gardening practices such as mulching, fertilizing, etc.) extends a plant's lifespan. To prune is to play a significant role in the ecology of trees and shrubs. We are intervening in natural process. Our aim

*What can the
moonlight do with my
new shape*

*But trace and retrace
its miracle of order?*

"The Pruned Tree"
Howard Moss

is to control and direct growth by eliminating the extraneous.

Enough classroom hort-theory. Let's look at real life pruning scenarios.

I'm often meeting with people who've just purchased an older property and feel overwhelmed by the out-of-control landscape they've acquired. My job is to help them prioritize the work to be done. Often the property has been "let go" and many trees and shrubs have become overgrown.

With older established trees, that may mean an abundance of dead limbs and old storm damage that need attention. Southeastern Pennsylvania's seemingly subtropical habitat encourages a vigorous growth rate, and tree limbs are now rubbing on roofs, shading patios, and filling gutters with leaves. Weakened dying branches may have become infected with wood borers, stem cankers, or a whole series of improperly made pruning cuts. Many times a tree with a vigorous rate of growth such as crabapple, hawthorn, or red maple has become a mass of water sprouts and branches, intertwining itself in seemingly inextricable fashion. In short there's much to do.

Understand, not too long ago these trees were regularly maintained.

When prioritizing, I first consider the most dire situations. If a roof is being damaged, or low limbs pose a safety threat, that's a good place to begin. After that, I begin to choose trees based on their value and prominence in the garden. Finally, I'll tackle the marginal trees that play a less critical part in the landscape.

Most trees under my stewardship are pruned on a three- to five-year cycle. These are usually situations where the client is keen to keep the tree relatively

free of deadwood and water sprouts. In urban locations, I might prune every year to keep limbs from growing into a neighbor's yard.

The optimum time for pruning, most practitioners agree, is during the dormant season, winter through early spring. Pruning when the tree is dormant has a distinct advantage when large numbers of living branches are being removed. Dormant pruning allows the tree to expedite the process of closing the pruning cuts.

Pruning deadwood can be done year-round, with exceptions such as elm and London plane, which are susceptible to disease if pruned during wet spring and fall weather. Some trees such as birch and yellowwood will "bleed" heavily with sap flow if pruned in the spring.

By the way, deadwood in trees is usually a natural process. Trees shed branches just as they shed leaves and needles, often because they lack light. As a result, it's usually internal branches that die out.

One thing that arborists don't agree on is how much *live* wood should be pruned from a tree. The debate centers around thinning branches, usually from the crown of a tree. Thinning is done by tree firms for a range of reasons, including weight reduction, decreasing wind resistance, and to allow more light to filter into gardens.

Trees that have been thinned have also taken on a perceived aesthetic quality. Opening up the canopy can enhance branch structure. The problem is that the pruners have on occasion been overzealous, leaving the tree with an almost exotic pom-pom look. A legitimate concern is that overthinning may put undue stress on the tree.

With young trees the work is usually less remedial, but every bit as important. "We prune for the future" is how one tree company described its approach. Developing a sound framework in a young tree is the best way to go. Pruning that selects and encourages good trunk and branch development can eliminate a whole host of problems.

That has always been apparent to me when I'm staring up at the massive oaks and beeches on the Swarthmore and Haverford College campuses. These are trees that have been pruned carefully and at regular intervals for decades, probably since the day they were planted.

continued

PRUNING

Good pruning books will have pictures and drawings that clearly show how to develop a strong terminal leader and well-spaced laterals, as well as how to achieve a desired overall form and habit. Practice helps. Deliberate and get a second opinion if necessary. The results are usually immediate, though not always. Often we are gratified by the effect, and other times, panicked and disappointed.

safety first

When we consider a tree for pruning work, we must pay our respects to Isaac Newton and the basic laws of gravity. As the elevation of a pruning job gets higher and higher off the ground (tree getting taller, wider, etc.) and begins to loom over all things precious, going up and getting back down safely becomes a legitimate concern. As we ascend stepladders, roof tops, and aluminum extension ladders, and what appear to be hearty climbable limbs, remember one thing: earth wants us back real bad, and the return is amazingly swift should we chance to lose our anchor point or foothold. Thump! Grunt! Unhhh . . . George?

Not only that, once we reach the above-ground arboreal workspace, we must then begin sawing, clipping, and snipping. Working high off the ground can be awkward and sharp saws, rusty loppers, dull secateurs, or awkward pole pruners can efficiently slice, dice, rip and snip one's flesh.

The safest place to be when pruning is with both feet on the ground. Some of us might be willing to admit past clumsiness, and recall an episode of twisting an ankle on what seemed like relatively flat ground, free of obstacles. Even a few feet off the ground, it's possible to pull a muscle, dislocate a joint, even crack a collarbone.

It seems so often that the limb you want to prune is just out of reach. If you only had borrowed your neighbor's 30-ft. extension ladder, you could hustle right up and cut that limb in moments.

Consider this: in Great Britain it's a law that arborist technicians be secured into the tree they're working on with rope and saddle at all times. They must be tied in using approved techniques as soon as they leave the ground. Now, at least one United States tree-care company has adopted this policy.

At least one pruning guide discourages laypersons from ever pruning trees from a ladder. "Working from ladders may be fine for one or two cuts," said Joe Bones, safety and training coordinator for F.A. Bartlett Tree Expert Company, "any more than that, it's probably time to call in a profes-



photo by David Graham

Arborist's gear includes carabener, safety snap, lanyards, nylon and leather saddle, and of course 5000 lb. test rope. Don't try this at home.

sional arborist."

Ladders are free-standing structures that must be leaned carefully against the tree. When you use a ladder, it's best to make it a two-person operation. Before ascending, have someone secure the ladder by "footing" it, i.e. keeping their feet close to its base. This will help prevent it from sliding out or changing positions. Stepladders are hinged at the top with a supporting structure and a platform on top. With a stepladder, hold both sides of the "A," to secure it from rocking forward or backward. Most newly purchased ladders will have instructions for proper angle placement, and safe working heights and loads.

Then there's the chain saw. Such an efficient machine and, ironically, a vital tool that helps promote tree health and vigor. With chain saws, more trees can be pruned in far less time than with manually operated handsaws. But as the horror movies and federal safety statistics so convincingly confirm, they're fully capable of dismemberment, maiming, and death.

Don't feel obliged to add a chain saw to your collection of pruning equipment. Chain saws are the most dangerous and unpredictable of pruning tools. Chain saw-related injuries peaked in 1982, when 69,000 people required treatment for injuries, according to *Consumer Reports*. Over the past 10 years, improved safety standards have reduced some of the potential hazards by implementing chain brakes, tip guards, and safety chain.

Still, many gardeners, as well as tree-

care professionals have the scars to show for mental lapses. These injuries are often the result of uniformed operation, or disregard for safety procedures.

As far as personal safety, I believe a little fear and respect for pruning tools, and the task at hand, goes a long way. Sharp pruning tools are going to make the work easier and more efficient. The same quality saws and pruners available to professional arborists are often available at garden centers and mail-order houses. Hand pruners made of gleaming Swedish tempered steel; Japanese handsaws, computer designed and sharpened; and American-built loppers built in tried-and-true fashion can all be had to use in the home garden. These are available from places like American Arborists Supplies, Inc. at 882 South Matlack St., Unit A, West Chester, Pa. 19382 (in Pa. 800-352-3458 or outside of Pa. 800-441-8381).

safety attire: geeky, but worth it

The arborist's trade magazines often depict a tree worker dressed to a point of awkward immobility in hardhat, ear protectors, goggles, chain saw-resistant chaps, gloves, and long-sleeved shirt. In short, looking pretty silly and hardly hip. That may be the case, and many arborists balk at using this attire. Slowly though, many are beginning to adopt it, appreciating the peace of mind that comes from working safe.

Heavy leather gloves, the old garden standby, are still essential safety wear.

They are often available with heavy canvas gauntlets, which are great when working around thorny branches and vines. Also, gloves specifically designed for chain saw use, which incorporate a synthetic material called Kevlar are recommended for anyone who finds themselves getting serious about chain saw use. They are often sold by chain saw dealers.

I also suggest safety glasses or goggles for any of the more rigorous pruning jobs. They are available in a whole variety of comfortable styles and colors.

the age of Shigo

Some years ago, looking at a red maple in the Wissahickon my friend and fellow arborist Ken Leroy exclaimed, "This—is what Shigo is all about." Alex Shigo, long-time researcher with the United States Forest Service, now a consultant and lecturer, is arboriculture's mover and shaker when it comes to teaching both amateurs and professional tree people how to care for trees. Since 1959 he has published over 270 research papers that have explored what Shigo calls "a new tree biology."

In terms of conventional tree health the tree was a mess. Over the years several storms had cut its original height of 50 feet by about a third. Stubbed-off broken limbs could be found throughout the tree, with both heart rot and squirrels' nests comfortably established. The crown of the tree was in slow decline, annually rejecting more twigs and branches. And in several instances the tree was "rejecting" limbs by forming thick branch collars and rings of callous growth.

"This is a forest tree, it has never been pruned or cared for," Ken observed. "Imagine the difference in its appearance if it had been cared for since it was a sapling."

Shigo's early work involved the chain saw-dissection of hundreds of trees to study how they responded to various wounds, infection, and rot. Over the past 10 or so years, his still evolving work has largely changed the way tree care professionals prune and care for trees.

Dr. Shigo's research introduced a whole new approach, as well as vocabulary, to arboriculture. In informed circles, the Shigo approach has done away with the "flush cut," instead leaving a healthy portion of what he terms the "branch collar." Pruning cuts are now "targeted" in respect to a "branch bark ridge" all to facilitate relatively speedy closure.

Shigo's work all but eliminated the practice of cleaning and filling cavities. His research also strongly argues against using any type of tree paint or wound dressing, consequently tree companies rarely use it



BEFORE: Pruning enhances shape and branch structure. Before pruning, densely placed limbs compete for space.



AFTER: A professional and sensitive pruning job has thinned approximately 20% of the branches. The result is good spacing with a more open habit.

anymore. Current debate centers around the use of injection and implant capsules for fertilizers, and insect and disease controls. Implant capsules injected directly into tree trunks have been a popular and efficient means for getting pesticides and fertilizers up to stems and branches as quickly as possible. Recent research has raised some concerns that injection methods may be creating wounds that could become entry points for decay organisms.

a word about topping

In botanical terms, Shigo defines topping as "the removal of vertical leader stems on large trees." It is the ultimate in destructive practices, short of girdling, and almost always done in ignorance. It is, in many cases, arboricide.

Topped trees can be found in almost any neighborhood: urban and suburban. "In rural communities," notes Bob Gutowski of Morris Arboretum, "it's often called 'a Dutch haircut.'"

"Curiously, the height of the topped trees one often sees on farms often coincides with a ladder's height," he said.

The practice of topping may have legitimate beginnings in Europe where trees have been "pollarded" for centuries. Pollarding is even endorsed by Shigo, as it has little negative effect on tree health. Pollarding must begin when a tree is very young, about five years old. The technique requires

annually removing one-year-old shoots back to a conglomerate of callous growth. Traditionally, the pollarded tree appears as a series of shortened knobby branches.

Unfortunately, topping trees is sold by many uniformed tree companies to customers who worry about a tree's height. The large random cuts will rarely be able to close, allowing decay organisms to enter and weaken the leaders. The stubbed-off verticals will also sprout profusely, and will be weakly attached. When a tree is topped, long-term decline of the tree is almost certainly assured, as it tries to compensate for the huge loss of energy-producing leaves and branches.

A more legitimate practice, though by no means perfect, is "crown reduction." When done sensitively by a knowledgeable tree technician, a tree that has become too large for its space can be pruned to better serve the scale of its space.

chips for the garden

One of the best things about brush chippers is the product they produce. The mountain of chips that a tree crew generates can be used immediately in beds for mulching. Using basic composting principles, the chips may also be stockpiled until brown and crumbly. Excellent compost has been made in only weeks by layering in fresh manure and aerating regularly.

Wood chips can often be had free or for a nominal charge. Often tree companies are glad to have a place to dump them.

a final thought

Prune often and don't fret too much about mistakes. Trees continue to grow and do a good job of hiding or growing past a pruning error. Don't take on more than you can handle. Work safely and leave tough jobs to professionals. Above all, enjoy a task that promises both short- and long-term rewards.

Alex Shigo Books About Pruning

Modern Arboriculture, Shigo & Trees Assoc., Durham, NH, 1991. \$45.00

New Tree Biology & Dictionary, Shigo & Trees Assoc., Durham, NH, 1986. \$65.00

Tree Pruning, Shigo & Trees Assoc., Durham, NH, 1989. \$39.00

Utility Tree Pruning Manual, Shigo & Trees Assoc., Durham, NH, 1990. \$3.00

Hal Rosner is a Philadelphia-based C.A.P.D. (Certified Arborist of Pennsylvania and Delaware). He and wife Jennifer used to raise figs and amaranth in South Philadelphia, but now raise children, Simma and Noah, in the Wissahickon area.



THE ARBORIST- YOUR TREE'S BEST FRIEND

When and how to hire an arborist

 by Kathleen A. Mills

Trees provide us with visual clues to their health. Arborist Jay Townsend suggests looking for the unusual.

- Are there large populations of insects in your tree?
- A lot of dead or broken limbs?
- Vertical cracks in the trunk?
- Does leaf size seem to diminish from year to year?
- Does the tree's foliage turn color and drop earlier than others of its species?

An answer of yes to any of these questions should send you to an arborist. Some tree problems lie underground. Soil disturbances by construction equipment or back-fill cause extensive damage to roots. By the time the damage is visible above ground, it is often too late to correct.

Local arborist David Liscom relates, "If you need to climb or use a ladder to work in the tree, you need a professional." Many tragic accidents occur while pruning with pole saws and chain saws.

what to look for in an arborist

A professional arborist specializes in tree work, and although other services may be offered, they are limited. Check local references of past clients and ask for a certificate of liability and worker's compensation insurance. Without these insurances you may be liable for accidents on your property.

The International Society of Arboriculture (ISA) through many of its local chapters has certification programs for arborists. In 1993 the ISA will have a nationally standardized program of accreditation. The CAPD (Certified Arborists of Pennsylvania and Delaware) boasts a strict program and more than 90 active members. Local county extension services and horticultural organi-

Trees: silent partners in our everyday lives. They soften our views, protect us from sun, house our wildlife, provide an endless list of foods and hard-goods, and simply, are beautiful to look at. While many of us are tree caretakers, recognizing and dealing with tree problems is not always easy. Often a professional, an arborist, is needed.

zations can provide you with information on Certified Arborists in your area.

Certification is not a guarantee of professionalism, education and experience remains the cornerstone, as in any profession. Ask potential arborists where they went to school, their course of study, and how many years of experience they have. Ask questions when you gather estimates for a job. Get at least two estimates, even if you have to pay for the arborist's time. Prices can vary greatly and often the cost of the estimate is deducted from the job.

Once you have decided on an arborist check with the Better Business Bureau to see if there are any complaints listed against the company.

specialty areas

IPM

Many firms now offer Integrated Pest Management (IPM) services. Monitoring programs reduce the amount of spraying necessary for control of pest problems, and in the long run prove to be cost effective. Arborist Hal Rosner finds educating his clients and including them in the monitoring process is an ideal way to control costs. As they become familiar with the tree and its pests, they can call someone in to spray in a timely manner.

Cabling

Since it is not likely you climb your trees looking for structural problems, cabling is

an item usually recommended by the arborist. An expensive prospect, arborists I spoke with recommend cabling only when the tree is a hazard in a public area or is of historical or aesthetic significance.

Lightning Protection

Equipping a tree with lightning protection is a long-term commitment and an expensive undertaking. If a tree has value, either historic or tied in to the property value, and sits in the open, today's lightning protection is effective. The process involves a braided copper cable that starts at the top of the tree and is buried in the ground out to the drip line. The cable is held to the tree by brass offsets. As the tree grows, the cable needs to be raised so it remains at the highest point of the tree. The brass offsets need to be reset so they aren't engulfed by the growing tree. If the cable is broken and no longer grounded, repairs must be made, otherwise the rod becomes a liability.

Trees add value to our homes and our lives. Knowing when your tree needs help and getting it the help it needs is up to you. Don't shy away from asking questions, a good arborist is happy to discuss his passion with you.

Special thanks to:

David Liscom, C.A.P.D., Keystone Tree Experts, Ambler, Pa.
Jay Townsend, District Manager, Davey Co., Aston, Pa.
Harold M. Rosner, Arborist, C.A.P.D., Philadelphia, Pa.

Kathleen Mills is a horticulturist for the Pennsylvania Horticultural Society.

COMMON TREE DISEASES Part I



by Lisa Blum

A two-part series about common tree problems and some Integrated Pest Management techniques you can use to maintain the plants' health and appearance.

Part I (in this issue) deals with problems caused by environmental factors such as nutrient deficiencies and air pollution, as well as diseases caused by microorganisms such as fungi and bacteria.

Part II (which will appear in September, '92) discusses tree injuries caused by insects and mites.

Trees are marvels of nature. They grow taller and live longer than any other organisms on earth. Yet even they are subject to stresses caused by environmental conditions and by other organisms. In urban and suburban landscapes, we see more of these problems than in a natural forest. Unlike forests, shade trees are selected based on man's needs, not on the tree's needs. Many times these trees are planted outside their natural range, without species or age diversity, in areas that are not ideal for tree growth and development. These factors greatly challenge a tree's health in the course of its life. They can cause a tree to become stressed and vulnerable not only to environmental extremes such as drought, excess water, nutritional imbalances, air pollution, and chemical injury, but also to subsequent attack by insects and diseases.

symptoms

We determine that a tree has a problem if it looks different from a healthy or normal tree. We call these visible changes in the plant "symptoms." The type of symptoms a tree has depends on the type of tree, the type of organism or factor causing the problem and the part of the tree affected (see Table 1). In addition, "signs" help us to recognize problems. They are the actual factors or parts of factors causing the problem. Insects, fungal growth, bacterial ooze, or deicing salt on the soil surface are all examples of signs.

abiotic diseases

The causes of tree problems are usually divided into abiotic (non-living) and biotic

(living) factors. Abiotic causes are usually environmental and cannot spread from plant to plant. On an individual tree, abiotic problems usually result in uniform symptom expression evenly distributed throughout the tree.

Abiotic factors we see constantly affecting trees relate to the soil and to the trees' root systems. Urban and suburban soils often consist of rubble and fill dirt that contain too little organic matter and too much construction debris creating highly alkaline conditions. This higher pH level does not allow the trees to absorb many vital nutrients. The most severe deficit is iron, characterized by yellowing foliage, except in the leaf veins, and reduced growth and vigor (Figure 1). Especially susceptible to iron deficiency are species of birch, cherry, dogwood, maple, oak, pine, sweet gum, and walnut. Lower the soil's pH with applications of sulfur or muratic acid, or add chelated iron to amend the iron deficient soil.

Poor drainage often occurs due to the lack of organic matter or compacted soil. Constant heavy traffic over clay and silt compacts the air space, both suffocating the roots and inhibiting drainage. Slow decline from the top of the crown of any tree can indicate this problem. While it's difficult to improve the soil once a tree has been planted, incorporating more organic matter, sand, or drainage material can alleviate the problem.

The use of deicing salts on streets and sidewalks builds up salt in planting pits, causes leaf scorch and drought, and eventually kills sensitive trees such as sugar, red, and norway maple, eastern white pine,

continued



Fig. 1 Yellowing indicates iron deficiency in the pin oak (*Quercus palustris*).

photo by Lisa Blum

25

Table 1. Common Symptoms of Tree Diseases

Foliage and Flower — Leaf spot, leaf blotch, leaf curl, leaf yellowing or chlorosis, leaf blight, powdery mildew, rust, leaf anthracnose, reduced growth, mosaic or pattern, galls

Shoot — Shoot blight, shoot canker or sunken area

Branches — Wilts, cankers, heart rots affecting heartwood, sap rots affecting sapwood on already dead limbs, witches' brooms — profusions of leaves and branches

Crown — Galls, cankers, blights, rots

Roots — Root rot, root lesions, root galls, knots, cysts, swellings, reduced root system

COMMON TREE DISEASES

photos by Lisa Blum



Fig. 2 Bacterial crown gall in Higan cherry (*Prunus subhirtella*).



Fig. 3 Bacterial leaf scorch in pin oak (*Quercus palustris*).



Fig. 4 Anthracnose fungi causes defoliation and angular branching in sycamore (*Platanus occidentalis*).

American and little leaf linden. Plant salt-tolerant trees in high traffic areas: e.g. English oak, green ash, red oak, golden rain tree, willow oak or Japanese pagoda tree. Flush existing trees with water after winter to leach the harmful chemicals from the root area.

Trunk and basal wounds, a common occurrence, become entry points for fungi, insects and other biotic agents. Avoid damaging wounds caused by car and truck doors, lawn mowers, pet or bicycle chains, and vandalism.

Injury caused by ozone, an air pollutant, can occur on certain sensitive trees. Ozone damage, in the form of a fine dark red or silver stippling of the upper leaf surface has been observed on sweet gum, cockspur hawthorn, London plane tree and ash. Evergreen trees such as pine and larch have needle stripping or needle tip burn if ozone sensitive. Only occasionally, in this area, will a tree seriously defoliate and decline due to this pollutant alone. Avoid using the susceptible trees if the concentration of ozone is consistently high.

biotic diseases

Biotic causes of tree diseases usually produce symptoms on specific plant parts and plant species. The symptoms are not uniformly expressed on a tree, but are more uneven and gradual.

Bacteria are tiny, single-celled organisms that reproduce quickly and destroy plant tissues or cause galls. They enter plants through natural openings or wounds made by insect feeding, mechanical injuries, or pruning and grafting. Bacterial diseases cause leaf spots, blights (large dead areas of tissue), galls, and wetwood, which is a flow of liquid from inside the trunk.

The most common bacterial diseases are fireblight (*Erwinia amylovora*) of crabapple, hawthorn, mountain ash and pear, wetwood of elm and crown gall (*Agrobacterium tumefaciens*) of willow and cherry (Figure 2). To avoid most bacterial diseases buy disease-free, resistant varieties; avoid unsanitary wounding; and in the case of fireblight, prune 12 inches below affected branches. (Clean tools with 10% bleach solution and rinse with water.)

A small type of bacteria (*Xylella*) is on the horizon, causing oak, sycamore, elm, and mulberry trees to exhibit scorching on the margins of the leaves and branch dieback (Figure 3). The symptoms seem to intensify during periods of drought experienced here in the Delaware Valley during

the last few summers. This disease has been found from the South up the east coast to New York. Some type of leafhopper or spittlebug insect has been implicated in spreading the bacteria. There are no effective controls except to remove dead trees. We are especially concerned about the long-term effects this disease may have on our tree population, which is made up of many susceptible oaks and sycamores.

The best way to control disease is to prevent it. For most of the biotic problems discussed here, preventing disease is critical because once infected, even chemicals cannot remove the fungus or bacteria, and the infected plant must be removed.

Eight thousand species of fungi cause plant diseases and account for a large percentage of common tree diseases. These small, thread-like organisms grow within and on top of plant tissues, and produce spores to spread the disease. This diverse group of organisms infects trees in many ways:

Anthracnose is a fungal leaf and twig disease that affects many types of trees including ash, dogwood, maple, oak, and sycamore. A few different genera of fungi cause the leaves of affected trees to develop brown spots or blotches, early defoliation, and twig death. (Figure 4) The fungi love wet, cool springtime weather during leaf budbreak and leaf emergence. Repeated seasons of anthracnose result in very angular branching, especially of sycamore. Most of the time the tree refores quickly enough to prevent serious damage.

Leaf spots and blisters occur on almost all trees at various times in their lives. These leaf spots are usually more unsightly than they are serious threats to the tree's health. The fungal disease called scab, however, causes leaves and fruit of apples, flowering crabapples, and pear to be spotted with dull green, velvety lesions and disfigured fruit. The fungus *Venturia inaequalis* is most active and devastating during the spring when temperatures are cool and moisture levels are high. This disease can be so severe that susceptible varieties of trees should not be grown. (See Penn State University source in book list for resistant varieties.)

Diplodia tip blight (*Diplodia pinea*), a

fungal disease, reported with increasing frequency, causes the death of shoot tips and branches of Austrian, Scots, ponderosa, red and other two- and three-needled pines (Figure 5). Lower branches die, with needles still clinging. Tiny spore bearing black bodies can be seen emerging from needles and cones. Since most susceptible are trees over 20 years old, stressed by drought, insects or mechanical injury, avoid unnecessary wounding, and water and fertilize the trees properly.

Many deciduous trees, but mostly maple species, are susceptible to a vascular disease called verticillium wilt. The fungus *Verticillium* grows in the tree's water and sap stream causing brown streaks in the wood, small leaves, heavy seed production, and wilting usually on one side of the tree. The fungus lives in the soil and can attack through the roots or lower trunk. Once inside the tree, it follows the water stream, clogs the tissue and causes symptoms and eventual decline. The only way to prevent the disease is to plant resistant species of trees in infested soil: e.g. pines, spruces, yews, birches, dogwood and the katsura tree, etc.*

Dutch elm disease, probably the most infamous tree disease today, is currently wiping out the American elm tree in the United States. The fungus *Ophiostoma ulmi* attacks the vascular system and prevents water from reaching all the parts of the tree. As a result, trees have yellow and brown wilted leaves, whole branches die back, and the tree dies. Elm bark beetles spread the fungal spores from tree to tree. Unfortunately, there's no cure, so we rely on prevention by removing infected trees, and slowing the disease down with pruning and fungicide, e.g. Abortect.

A disease particularly troublesome in Philadelphia affects our plentiful sycamores. It's called canker stain and causes large sunken cankers, sometimes up to 10 ft. long, in the lower and middle trunk of trees (Figure 6). The fungus, *Ceratocystis fimbriata*, invades trees wounded by pruning and vandalism, and girdles the precious sapwood. The branches above the canker die, and the fungus eventually spreads throughout the tree killing it. Local municipal groups are currently removing infected sycamores and at the same time changing

*See *Diseases of Trees & Shrubs*, Wayne A. Sinclair, Comstock Publishing Assoc. of Cornell University Press, 1987. Reference book available at Pennsylvania Horticultural Society. See page 374 for 40 or more resistant species.

our street landscape dramatically.

A disease of *Cornus florida* has received extensive publicity in this area because this dogwood is so widely planted in our landscape. This disease, called **dogwood decline**, involves many complicated factors. A fungus in the genus *Discula* attacks these trees and causes cankers, death of foliage, branches and eventually the entire tree. This fungus, however, selects trees weakened by poor site conditions, and especially by the combination of summer droughts, cold winters of the '70s and warm winters of the '80s. The only way to effectively control the spread of the fungus is to remove infected branches, and then whole trees.

The final word about fungal diseases, which not only invade the living tissue and affect tree health, but also attack the structural integrity of the tree causing hazards from falling limbs and toppling trees. There are many fungal diseases and most of them enter through wounds and slowly degrade the wood. They cause slow growth, branch dieback, small leaves, heavy seed set, wood decay, and most obvious, mushroom or conk structures forming on limbs, trunks, or root flares. If you see any of these symptoms, remove the tree or parts of the tree affected before a dangerous situation develops.

integrated pest management

In the 1990s we emphasize successful disease and pest management with the least damage to beneficial organisms, human health, and environmental quality. Integrated pest management recognizes that pests and diseases are a normal part of our environment, and that we will never be able to eliminate them from our landscape plants. Instead, the aim is to care for plants with as little disease or pests as necessary to maintain the plant's health and aesthetic quality. This management approach is most developed for insect and mite problems, and I will discuss it in relation to them in Part II of this series (Sept. 1992).

The principles of integrated pest management do apply to disease management (see Figure 7). Instead of relying on one chemical control, we usually achieve greater success by using many methods. The best way to control disease is to prevent it. For most of the biotic problems just discussed, preventing disease is critical because once infected, even chemicals cannot remove the fungus or bacteria, and the infected plant must be removed. The most

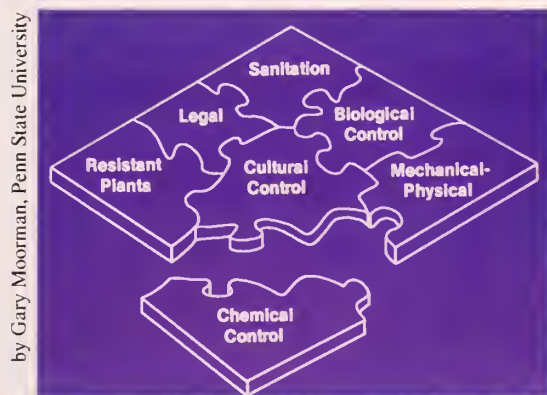
continued



Fig. 5 Diplodia tip blight in Austrian pine (*Pinus nigra*).



Fig. 6 Canker stain in sycamore (*Platanus occidentalis*).



Components of Integrated Pest Management.

by Gary Moorman, Penn State University

photo by Lisa Blum

photo by Lisa Blum

COMMON TREE DISEASES

economical and carefree way to prevent disease is to:

1. Purchase certified disease-free plants that are genetically resistant to a particular biotic fungus or bacteria. (See books listed with this article for suggested plants.)
2. Give trees a good beginning: plant them in their appropriate site. Consider, do you have enough root space, good air circulation, is it dry or moist, shady or sunny; is soil high in organic matter, with excellent drainage properties.
3. Provide good cultural care for the trees: water them, fertilize when needed, prune properly in dry weather, remove plant debris, use clean tools.

In this way, we can effectively manage most of the described diseases without using pesticides. Only in certain situations will we need chemicals to support other management techniques.

Finally, healthy trees depend on knowledge. Every person must research the needs of a particular tree **before** planting it.

Trees discussed in this article

Common name Botanical name

Apple	<i>Malus</i> spp.
Ash	<i>Fraxinus americana</i>
Green ash	<i>F. pennsylvanica</i>
Birch	<i>Betula</i> spp.
Cherry	<i>Prunus</i> spp.
Crabapple	<i>Malus</i> spp.
Dogwood	<i>Cornus</i> spp. <i>Cornus florida</i>
Elm	<i>Ulmus</i> spp.
American elm	<i>U. americana</i>
Golden raintree	<i>Koelreuteria</i> spp.
Hawthorn	<i>Crataegus</i> spp.
Cockspur	<i>C. crus-galli</i>
Japanese pagoda tree	<i>Sophora japonica</i>
Larch	<i>Larix</i> spp.
Linden	<i>Tilia</i> spp.
American linden	<i>T. americana</i>
Little leaf linden	<i>T. cordata</i>
London plane tree	<i>Platanus x acerifolia</i>

Maple	<i>Acer</i> spp.
Norway maple	<i>A. platanoides</i>
Red maple	<i>A. rubrum</i>
Sugar maple	<i>A. saccharum</i>
Mountain ash	<i>Sorbus</i> spp.
Mulberry	<i>Morus</i> spp.
Oak	<i>Quercus</i> spp.
English oak	<i>Q. robur</i>
Pin oak	<i>Q. palustris</i>
Red oak	<i>Q. rubra</i>
Willow oak	<i>Q. phellos</i>
Pear	<i>Pyrus</i> spp.
Pine	<i>Pinus</i> spp.
Austrian pine	<i>P. nigra</i>
Eastern white pine	<i>P. strobus</i>
Ponderosa pine	<i>P. ponderosa</i>
Red pine	<i>P. resinosa</i>
Scots pine	<i>P. sylvestris</i>
Sweet gum	<i>Liquidambar</i> <i>L. styraciflua</i>
Sycamore	<i>Platanus occidentalis</i>
Walnut	<i>Juglans</i> spp.
Willow	<i>Salix</i> spp.

For more reading about common tree diseases, see book list on page 39.

Lisa Blum teaches applied plant pathology and tree pathology at Temple University, Ambler, Pa., and consults on plant and tree problems in the Delaware Valley. She received her B.S. in Botany from Duke University and her M.S. in Plant Pathology from Cook College, Rutgers University.

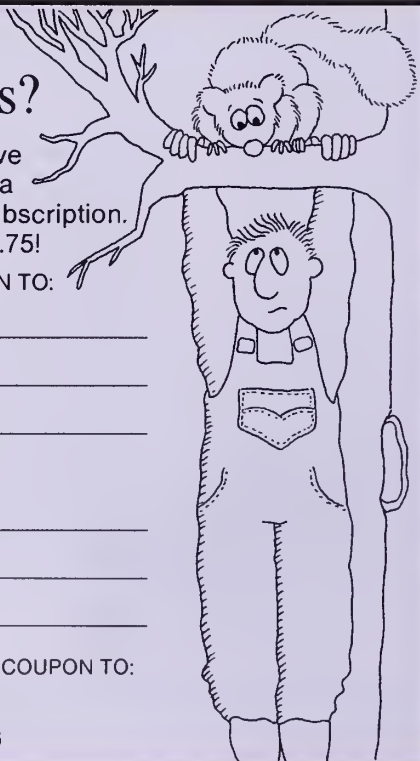
Up a tree about gifts?

Branch out and give family and friends a **GREEN SCENE** subscription. A BARGAIN AT \$9.75!

SEND SUBSCRIPTION TO:

FROM:

RETURN CHECK AND COUPON TO:
GREEN SCENE, PHS
325 Walnut Street
Philadelphia, PA 19106



A TREE SYMPOSIUM

Promoting Tree Health • Establishing Street Trees Successfully

WHEN: Saturday, November 14, 1992, 9 am - 4 pm

WHERE: Swarthmore College, Performing Arts Center, Swarthmore, Pa.

WHAT: Session will cover what happens to trees in the city; program site assessment and how to make decisions before planting.

The best trees and shrubs for the city environments.

Site modification. Latest techniques for dealing with soil conditions.

Transplanting techniques — getting trees off to a good start.

SPEAKERS:

Nina Bassuk, associate professor at Cornell and Director of the Urban Horticulture program at Cornell University

Professor Peter Trowbridge, chair of Landscape Architecture at Cornell University

Patricia Lindsey, doctoral candidate at Cornell University

The Urban Horticulture Institute, now in its 12th year at Cornell University, has focused on street trees as a major part of its research into horticultural problems in urban areas.

COST: \$45.00

For more information or a registration form contact: The Pennsylvania Horticultural Society, Tree Symposium, 325 Walnut Street, Philadelphia, PA 19106-2777.

TENDER LOVING CARE FOR STREET TREES



by Patricia Schrieber

Acting together or alone, people in the city and suburbs can substantially prolong the lives of their street trees. These stories about how three neighborhoods did just that, tell how to plant, replant and maintain trees in spite of the many challenges to the trees' survival.



photo by Patricia Schrieber

Willie Mae Bullock stands in the shade of one of the 16 lindens she and her neighbors planted 14 years ago. Today, after the neighbors' careful nurturing, 11 lindens survive challenging city conditions.

Sixteen littleleaf linden (*Tilia cordata* 'Greenspire') were planted on Willie Mae Bullock's block 14 years ago. Linden branches outside her window now shade her living room from the hot afternoon sun. Bullock's Philadelphia block of North 20th Street was one of 10 groups that worked with the Pennsylvania Horticultural Society's Philadelphia Green program in 1978, during its first year of street tree planting.

Willie Mae Bullock recalls how much attention the 16 trees required in the first few years after planting. Her daughter, Sharon Turner, and neighbors Luther Belle Williams, Sarah Morrell and Willie Jenkins shared the work. They hauled two or three buckets of water to each tree from early spring to early winter twice a week for the first two years. They carefully removed the stakes and wires that had supported the young trees through the first year. They watched as the trees adjusted to life on the street, tested for durability by the neighborhood children who swung on branches and jostled young trunks.

After two years, watering became a once-a-week task. When the trees were in the ground three years, the City of Philadelphia notified the block residents that their well-worn sidewalks were to be replaced with new ones. Since the trees

would be in the way during construction, the City expected to dispose of them and offered new replacement trees. The neighbors refused adamantly. According to Bullock, "Caring for our trees was like raising a child. We had to save them."

replanting after construction work

Sidewalk construction started in July. The trees were lifted from the existing pits and left on the street. The weather was hot and dry. The neighbors watered the exposed tree roots thoroughly every day. The rains came after two weeks, but the neighbors continued to water by hand for another three weeks. When all the new pavement was laid, the trees were replanted in their original locations. The group watered twice a week through the rest of the season. Of the 16 trees planted in 1978, 11 survive. Bullock recounts the causes of death for the other five: four died from root rot caused by poor drainage in the pits, and one died from root poisoning when motor oil was continuously dumped into the tree pit.

Poor drainage is often not detected until a tree is too far gone. Standing water in the bottom of the pit signals problems when the pit is being dug. Rarely will a tree planted in such a situation survive. Although proper soil preparation can sometimes help, if heavy clay surrounds the prepared tree

pit, the roots may not thrive.

Root damage from motor oil is easier to correct. People are usually unaware of the stress caused to tree roots when they dump oil from vehicles or machinery on the tree pit. They just need a convenient place to discard the used oil. Such action is careless, not vindictive. When you see this behavior, be ready to inform, not prosecute. Let the misguided oil changer know about the damage that can occur if they continue this practice.

Although substitutes like cinders or sand can be used for icy pavements, most municipalities continue to use rock salt to melt ice and snow on the street. When salt or salt spray has landed in the tree pit, water the soil in the pit immediately to dilute the concentration of salts.

Bouvier Street: sharing work and transcending challenges

Mildred and Tom Peterkin have lived on North Bouvier Street for more than 40 years. The Peterkins and their neighbors Anna Morris, Nancy Blackwell, Irene Butler, Mayson Lovelace and others shared the dream of a shady street. Finally, in 1978, working with Philadelphia Green, they dug the tree pits for 14 'Summer Shade' maples (*Acer platanoides* 'Summer Shade'). All 14 trees survive today.

continued



North Bouvier Street neighbors gather to dig tree pits in the summer of 1978. Every pit was dug three feet deep — by hand. The arduous work took hours; by the following season a labor-saving auger mounted on the back of a tractor was used.

One tree stands as a special tribute to the deep spirit of cooperation that abides on North Bouvier. About a year after planting, a rare dispute arose between two side-by-side neighbors. Unfortunately, one person sought revenge by yanking his neighbor's tree out of the pit, leaving the tree, root ball and all, on the sidewalk in the middle of the night. Neighbors gathered in disbelief the next morning. Luckily the root ball stayed intact. These experienced street tree planters set to work. Several people loosened up the soil in the tree pit. They dug a hole slightly larger than the root ball. Several strong men carefully lowered the heavy root ball back into the pit and filled the space surrounding the roots with the soil they had just removed. They tamped the soil, and thoroughly watered the entire tree pit. They finished off with a three-inch layer of wood chips to protect the roots as they readjusted to the recent shock and reestablished themselves in the ground.

When they had planted the trees the year before, the group had amended their clay soil, using a recommended 2:1 ratio of existing soil with composted leaves, twigs and bark. Peat moss or rotted manure would have done as well. Some street tree researchers today deny the need for soil amendments. Their studies indicate that roots adjust better to poor soils found under sidewalks from the start. If allowed to acclimate to a richer soil environment created with amendments, the roots, say the researchers, can only go into shock when they eventually reach poorer soils beyond the amended pit. Whether amendments are added is actually case specific, depending on the type of soil found in a

particular site. A tree pit full of cinders would never retain enough moisture for the healthy growth of a street tree.

Repeated attacks on the North Bouvier trees by delivery and trash trucks have torn branches and bark. The volunteer pruners remove broken or dead branches within their reach from where they stand on the sidewalk or street. They also trim the ragged edges of torn bark. Ladder climbing to prune is prohibited by the Fairmount Park Commission (FPC), which has jurisdiction over all street trees in Philadelphia. Citizens must leave the higher branches to an FPC-approved arborist, who obtains a work permit from FPC before pruning any street trees. Working from ground level, the pruners snip suckers sprouting from any tree's base and lop branches emerging any lower than six feet from the pavement, an FPC regulation.

Three times in the past 14 years, the North Bouvier residents tapped their block club's treasury to hire an arborist for tree trimming. They know that FPC funds are limited to emergency work only. By setting aside funds themselves, they have kept their street trees in good health, at a manageable size.

Soon after the trees were planted on North Bouvier, several of the men built low wooden picket fences for each tree to protect the trunks from vehicular damage and to prevent soil compaction by pedestrians. Pleased with the way the picket fences looked, some people even planted flowers or groundcover around the base of their trees. The picket fences lasted only two years, smashed to bits by car and truck doors. In some neighborhoods, people pro-

Studies reveal that street trees do better where flowers or other groundcover grow. When people remember to water their groundcover plantings, they provide that extra caring touch street trees need for their survival. When pedestrians avoid walking on the patch around a tree because of the plantings, the soil has better aeration, a bonus for roots growing underneath.

tect tree trunks with more durable wrought iron guards. If placed too close to the trunk, the guard becomes a liability, girdling and expanding trunk as the tree ages. The best tree guard, no matter what the material, store bought or homemade, is the one installed around the edge of the tree pit, far enough away from the trunk to allow peaceful coexistence.

Picket fences or not, people continue to grow flowers and groundcovers. Unwittingly, they cultivate a long-term controversy over whether or not groundcover plantings compete with tree roots for limited water supplies in tree pits. Studies reveal that street trees do better where flowers or other groundcover grow. When people remember to water their groundcover plantings, they provide that extra caring touch street trees need for their survival. When pedestrians avoid walking on the patch around a tree because of the plantings, the soil has better aeration, a bonus for roots growing underneath.

the tree king of Snyder Avenue

John Castagno has forged an almost one-man effort akin to Johnny Appleseed in his South Philadelphia neighborhood. People on his block of Snyder Avenue keep more to themselves and are less cooperative with their neighbors, so John works alone. He convinced Philadelphia Green to assist in planting trees on his block 14 years ago. He inspired business owners and residents on adjoining blocks to allow him to plant trees in front of their properties. John has provided most of the maintenance for the trees over the years. John is tree king of Snyder Avenue.

John has plenty to say after 14 years of steady, solo tree care. He wants anyone who chooses to enhance their city streets with trees to understand that they are making a considerable commitment. "Be ready to work out deals with neighborhood kids as well." When youths from a neighboring block interfered with the trees and shrubs, he asked some of the youngsters living on his own block to set the others straight. Whatever was said or done, John never knew. He does know that the vandalism ended.

The FPC has created a Street Tree Arboretum near Memorial Hall in Fairmount Park, composed of 40 different tree species. Pat Crossan describes the collection as their "outdoor showroom."

While John beams over bringing so much green to his neighborhood, he is also tired. He's tired of the constant care without any partners. He's tired of listening to people complain about the flowers that need sweeping and the fruit and birds that leave their marks on the pavements and car roofs. Though John may tire, he never gives up. He lives out his commitment to making his neighborhood more livable. John takes action whenever the need arises. He can even become a thorn-in-the-side. City crews come around periodically to prune the trees away from the power lines of the electric buses that run along Snyder Avenue. Whenever the crews prune improperly, John is on the phone in a flash. He's always around, keeping an eye out, when the crews come back to finish the job right.

John patrols a mix of species that line both sides of Snyder Avenue. The Japanese pagoda trees (*Sophora japonica* 'Regent') planted with Philadelphia Green were later joined by lindens, maples, cherries and hawthorns. John suggests that Japanese pagoda trees not be used as street trees where there are sidewalks. "For six weeks of flowering, we are constantly sweeping two or three times a day. Then later in fall, the pods start showering down. Leaves are one thing. Pods and flowers are just too much." Several of his neighbors, feeling chained by the amount of work, have even gone to the extreme of cutting down the trees in front of their houses.

Pat Crossan is the Fairmount Park Commission's (FPC) Urban Forester. She frequently hears complaints about one tree species or another. Pat considers all the feedback as she studies the FPC list of recommended street trees, a guideline for contractors, landscape architects and organizations involved in street tree planting. Each species must be carefully evaluated in terms of the existing conditions of a particular site. Because of the messy flowers and pods, the Japanese pagoda tree, very tolerant of extreme urban conditions, might be better suited on a grassy planting strip away from the sidewalks of South Philadelphia. A species chosen for an ornamental characteristic could easily be inappropriate because of overhead wires, width of sidewalk, lack of sunlight, or any number of limiting factors on an actual location.

Take, for example, the Kwanzan cherry



John Castagno, the tree king of Snyder Avenue, by his pioneering efforts inspired tree plantings on neighboring blocks making the area into an oasis. Castagno is shown here on the 1100 block of Snyder Avenue, frequent winner of "Greenest Block in Town" Award in the City Gardens Contest.

(*Prunus serrulata* 'Kwanzan'), no longer recommended for street planting. The Kwanzan cherry was a popular street tree species for quite a few years. Its bright pink, opulent flower clusters are stunning in the hectic bloom time of early spring. Its small stature made it a tree of choice on blocks where it fit comfortably under power lines. As the Kwanzan cherry population matured, the stresses of city streets reduced the species' ability to withstand intense invasions of scale. Diligent Kwanzan cherry lovers nurse along their surviving trees, scrubbing the scale with brushes and brown laundry soap. Spraying with dormant oil just before the buds begin to break open in early spring is a time-saving alternative. Procrastinators who miss the bud break can use a lighter grade of horticultural oil during warmer weather.

The FPC has created a Street Tree Arboretum near Memorial Hall in Fairmount Park, composed of 40 different tree species. Pat Crossan describes the collection as their "outdoor showroom." People can visit the Arboretum to study the trees for their growth and ornamental characteristics. In these days of tight budgets, the FPC has no funding for street tree planting. What they can offer to individual property owners living in Philadelphia is the FPC Tree Fund Program. Through this program, anyone who wishes to have a tree planted may pay \$250 per tree to the Tree Fund. The FPC will coordinate the planting. (See box.)

As part of the Pennsylvania Horticultural Society's Philadelphia Green program, approximately 3,000 trees have been planted

on the streets of Philadelphia since 1978. People like Willie Mae Bullock, Mildred and Tom Peterkin, John Castagno and their neighbors feel strongly about planting trees in their communities. They show their commitment by the time and energy they devote to the care of these trees. Their caring helps the trees adjust to and survive the stressful conditions found along city streets.

city tree's lifespan

The most conservative estimated lifespan of a city street tree is about eight years. Other researchers expand that lifespan to 25 to 30 years. No matter which number you might subscribe to, both are short compared to the life expectancy of a tree in an undisturbed forest setting.

Today, the trees that were planted 14 years ago on North 20th, North Bouvier and Snyder Avenue have already passed the eight year mark and are almost halfway to 30. These days, they require much less week-to-week care than they did more than a decade ago. People clear the weeds and the trash that collect in the tree pits. These trees now require watering only during periods of drought. The trees that reach their twentieth year will begin to require more time and energy to keep them in good health. The neighborhood tree care corps will no longer be able to do all the work themselves with occasional watering and ground-level maintenance. Professional arborists will be needed to shoulder more of the work involved in caring for these older trees. Funds must be allocated for pruning, disease control and tree removal.

continued

The cost of these services will certainly exceed the limits of a block club treasury.

The FPC estimates that street trees in Philadelphia number more than 250,000. Studies by the American Forestry Association, the U.S. Forest Service, and other professional and municipal organizations underline the expediency for planting new trees to balance the losses from aging trees, estimated at four for every new tree planted. As more and more trees are planted and more and more older trees lose their vigor, tree lovers are faced with the challenge of creating workable solutions on a broad scale to ensure the continued health of an aging street tree population. There are wonderful models in cities and towns around the country. Now is the time for everyone to consider the alternatives. It just makes sense. As Willie Mae Bullock puts it, "Trees are scarce in the city, so they are extra precious."

Patricia Schrieber, long-time tree lover, is Education manager for Pennsylvania Horticultural Society's Philadelphia Green program.

READ ABOUT STREET TREES

Caring for Trees on City Streets, Joan Edwards/Environmental Action Coalition, Charles Scribner's Sons, N.Y., 1973.

The Granite Garden: Urban Nature and Human Design, Anne Whiston Spirn, Basic Books, Inc., N.Y., 1984.

Shading Our Cities,* Gary Moll and Sara Ebenreck, ed., Island Press, Washington, D.C., 1989.

The Simple Act of Planting a Tree,* Tree People/with Andy and Katie Lipkis, Jeremy P. Tarcher, Inc., Los Angeles, (CA), 1990.

Urban Forestry: Planning and Managing Urban Greenspaces,* Robert W. Miller, Prentice Hall, Inc., Englewood Cliffs, 1988.

* Available from PHS Library

FREE TREE CARE PACKET

For a free packet of care sheets on topics such as *Selecting a Tree*, *Care After Planting*, *Insects and Disease*, *Give Your Tree A Good Start* and others, send a postcard requesting Tree Care Packet to:

Mindy Maslin
Street Tree Program
Philadelphia Green
Pennsylvania Horticultural Society
325 Walnut Street,
Philadelphia, PA 19106

FAIRMOUNT PARK STREET TREE FUND AND STREET TREE LISTS

For information on the Fairmount Park Street Tree Fund, the Street Tree Arboretum, lists of recommended street tree species and approved arborists for Philadelphia, call Pat Crossan, District Manager, FPC, at 685-0096.

Trash for Trees

by Libby J. Goldstein

Finance your neighborhood's street trees.

We get cash for our trash. Here in Queen Village, we've been recycling our newspapers, glass, and aluminum cans (when the can thief doesn't get them first) since December 1985. We leave our leavings at the corner on Saturday morning. City trucks take them to National Temple Recycling Center. We get money to buy street trees, fix up our parks and turn our neighborhood clean and green.

Since 1986, the Recycling Committee of the Queen Village Neighbors' Association (QVNA) has given out over \$10,000 in grants to 20 projects developed by block groups: by Southwark/Queen Village Garden; by Bainbridge Green, the median strip of Bainbridge Street between 3rd and 5th streets; and by Friends of Mario Lanza Park. The Garden used its grant to supplement other funds to pay for a new wooden lath fence and finials. Friends of Mario Lanza and Bainbridge Green used their recycling money to buy and plant trees, shrubs and flowers.

Various block groups have planted 15 to 20 trees throughout the neighborhood: Lombard Street to Washington Avenue,

Delaware River to Sixth Street. In 1988, some recycling money went to a group of neighborhood kids who used their after-school hours and Saturdays to clean the South Fourth Street business strip and some adjacent blocks as well.

While it's not green, Queen Village Town Watch has gotten recycling grants, too. It may be the only Town Watch in town that raises its expense money by holding a plant sale. This year's sale, held at Southwark/Queen Village Garden on Saturday, May 3, raised \$600.

Are there problems with the program? Nothing huge. Some folk won't believe that we can't use plastic and cardboard and have to be reminded — weekly. The can thief won't believe that we know who he is. When he wheels by, he's always "so surprised" to find us waiting to stop him.

Meanwhile, Robert Pierson, who developed our block corner recycling program, and Bernard Stiefel, executive director of QVNA, have been propagating our block corner recycling program. To the west, Bella Vista has joined us in recycling for street tree planting and park renovation. Fishtown rewards kids for good school

attendance with their proceeds. In Kensington, they plant trees, clean vacant lots and support a nursery school for the children of teen-age mothers. Care for their babies lets mothers finish their own schooling. Cedar Park and Spruce Hill in West Philadelphia have also developed block corner recycling programs. They donate at least some of their money to environmental advocacy groups.

Block corner recycling costs Philadelphia \$77 less per ton than regular trash collection and \$122 less than curbside recycling. The City saves money by supporting programs like ours. The communities get funds for cleaning and greening projects that the City can't afford. Trash for Trees... it's a super trade.

Green Scene contributor Libby Goldstein is recycling coordinator for her block in Queen Village.

To Start a Recycling Program

For information write to:
Robert Pierson
318 Gaskill St.
Philadelphia, PA 19147

PEOPLE MAKE A DIFFERENCE



by Anne S. Cunningham



In the cities and in the suburbs, trees not only need maintenance, they need advocates for their survival and replacements. Here's how three groups, one in Philadelphia, one in Chestnut Hill and one in Swarthmore make a difference on their tree-lined streets.

continued

The Chestnut Hill Landscape and Tree Committee said "No" to the way their area's street trees were being pruned. They are (counterclockwise, left of tree) Jim Flaherty (manager of the Chestnut Hill Community Association), Dorothy Sheffield, Heidi Shusterman and Carol Franklin of the Chestnut Hill Street Tree Committee, and landscape architect Baldev Lamba.

photo by Ira Beckoff



In May 1992, 70+ volunteers participated in a three-day inventory of street trees in Center City Philadelphia. The volunteers collected 21 pieces of information on 2,207 trees to determine the distribution and health of the tree population. Documenting the fate of street trees helps us show what can happen to improperly planted or cared for street trees.

Center City Philadelphia

The Center City Residents Association (CCRA) had a good track record of planting and caring for trees in their Philadelphia neighborhood. So when they developed a plan, it wasn't a quick fix; it was a long-range plan to ensure tree education, continued participation and improved surroundings for Center City residents for decades to come.

"In cities, for every tree planted, six die or are removed, so you're fighting a losing battle," says Cecily Kihn, CCRA spokeswoman. "Because land is limited, city residents express their horticultural interests in any way they can and trees are right outside your window." Taking on a tree rescue operation was a natural for the Center City Residents Association. "We saw our neighborhood as a pilot project for the rest of Philadelphia," says Kihn.

The Pennsylvania Horticultural Society joined hands with CCRA to develop a proposal approved by Pew Charitable Trusts for \$78,000 to initiate a pilot tree program. The pilot included a tree inventory, a long-term tree planting and maintenance plan, and two state-of-the-art planting demonstration sites.

Blaine Bonham, executive director of

Philadelphia Green, The Pennsylvania Horticultural Society's outreach program, said one of the keys to the success of the joint project between CCRA and PG is that "We developed a unique approach of doing a neighborhood inventory with extensive volunteer involvement."

The Center City tree inventory perimeter was Walnut Street and South Street running north and south, Broad Street to the Schuylkill River from east to west.

When a small ad in *Welcomat* invited volunteers to help conduct a tree survey, people of every age, persuasion and color came out of every nook and cranny to help count trees. Members of the University of Pennsylvania's Department of Landscape Architecture and Regional Planning offered assistance.

Ideas for implementing the survey were field tested in October, 1990. After all the kinks were straightened out the big count was targeted for May, 1991. The recruits showed up beforehand for training sessions and left with visions of leaf prints dancing in their heads.

Armed with enthusiasm, clipboards and yardsticks, 30 three-person teams infiltrated 252 acres of the territory. Their expeditions charted 2,207 trees, 252 empty tree pits, 12

standing dead trees and 47 stumps.

Barbara Olejnik, manager of PHS's Center City Green, emphasizes the importance of the manual inventory. "In addition to cataloging the tree size and location, people observed and recorded the surrounding conditions, such as sidewalk width, overhead wires and other factors affecting growth patterns. If we had used the services of a consultant we would have the same tree count, but we would have missed a lot of the important personal involvement from the neighborhood residents."

The results of the inventory, combined with the professional help of landscape architect Neal Belanger of the Delta Group, provide information vital to the future of trees in Center City Philadelphia (see box).

Today, almost two years into the proposed five-year project, CCRA tree people have just completed their first demonstration site, based upon the results of the survey. They looked for a non-residential area where city residents would notice a big difference with the addition of trees.

The Philadelphia School, in the 2500 block of Lombard Street, seemed to be the perfect candidate. Located on a former industrial site and surrounded by a chain link fence, the bleak treeless exterior of the



Eugene P. Dichter prunes a recently planted tree during one of the street tree maintenance workshops in March 1992.

school had nothing to relieve its monotonous expanse. When the CCRA tree people approached the school, offering trees and a maintenance plan to keep the trees healthy, the school community responded with open arms. Parents and teachers donated money and time; kids brought in pennies and nickels and dimes to put in a huge Tree Fund jar. (One child arrived at school with the entire contents of his piggy bank — so many coins that the school called his parents to see if it was really OK for him to donate them.)

The Philadelphia School's successful tree project won a \$5,000 America The Beautiful grant this spring, and the CCRA tree program continues to expand. The Tree Committee has tripled in membership and they have plans for a major project this fall: they want to establish a promenade of continuous trees along Locust Street, from one block east of Rittenhouse Square to the end of two blocks west of the Square.

"This is supposed to be a five-year project," beams CCRA board member Frank Stefano, "but everyone's so enthusiastic, I'm sure it will go on forever and ever."

Chestnut Hill and the Philadelphia Electric Company

The Chestnut Hill Landscape and Tree Committee is a prime example of a squeaky wheel that made itself heard.

"In the old days," says Chestnut Hill Community manager Jim Flaherty, "ruthless pruning by utility companies was not just ugly, it was killing trees." So residents of this northwest section of Philadelphia, famous since Colonial times for its magnificent large trees, developed a multi-faceted plan.

Instead of confronting Philadelphia Electric Company (PECO) as The Enemy, Chestnut Hill residents became the first group to work *with* PECO, with the focus on trees. PECO senior forester Paul A. Johnston speaks at Committee meetings, explaining how more than 1.5 million trees grow in conflict with PECO's power lines, and they need to be managed. In addition to discussing proposed work areas, Johnston hands out leaflets about tree planting and care, and offers opportunities to view PECO's video, "Plant Right," encouraging homeowners to plant the right tree for their own space, not just a tree that looks nice in someone else's yard.

Johnston directs 28 professionally trained

"Trees are the silent victims of our senseless attitude of controlling everything. Why do we try to squeeze living things into unlivable conditions? With street trees, people should work with nature, not against it."

PECO foresters in the largest program of its kind in the United States. The PECO foresters now notify homeowners, and explain what they need to do, *before* they start up their chain saws. Both sides compromise. Most of the maintenance crew really prefer to untangle utility wire/tree conflicts in the light of day, rather than in the middle of the night in a snow storm. And the utility company continues to encourage residents to plant suitably compact, low-growing or columnar trees that won't need to be altered in the future.

In 1990, the Chestnut Hill committee hired Baldev Lamba, an associate professor of Landscape Architecture at Temple University's Ambler Campus, to survey their non-residential street trees. Before the survey, there was a *feeling* for Chestnut Hill's trees, but no accurate, tallied picture. Now the community knows what they have and what it will take to sustain the character of Chestnut Hill's trees. They have a pictorial and numerical record of which trees flourish, the diversity that exists (or doesn't exist; of the more than 3,000 trees charted by the end of this summer, at least 46% are maples). The survey also will save money in the long run, with its detailed record of survivability and maintenance programs.

As Lamba likes to remind people, "Trees are the silent victims of our senseless attitude of controlling everything. Why do we try to squeeze living things into unlivable conditions? With street trees, people should work *with* nature, not against it."

Swarthmore, Pa.

Anyone who has driven through this area in spring knows why Swarthmore has been named "Tree City USA" on Arbor Day, for the past 12 years.

Thick leafy branches of tall old trees create arches over lively wide streets. Diversity exists from block to block, but many streets retain their character with spectacular plantings of single species. Rich, old sugar maples give the impression of allees from a previous generation. Flowing crabapples or weeping cherries show up every few blocks, looking like proud

continued

PEOPLE MAKE A DIFFERENCE

girls in Easter dresses lined up in front of their parent's houses.

"We get lots of calls from people asking 'How do you do that,'" says Swarthmore Borough Tree Committee chair William J. Cresson, Jr.

Cresson's Tree Committee has been active for more than 20 years. Seven horticulturally experienced committee members work with lots of volunteers to provide trees at a discount, planting help, and maintenance advice to local residents. They joke that they have more streets than suitable street trees, but their goal is to

create pride and a workable, affordable, tree program.

When planting new trees, the Committee tells residents about the hidden future costs like trimming for power lines, repairs to sidewalks heaved by surging roots, etc. Then they might recommend compact trees or medium-size trees such as *Cercidiphyllum japonicum*, the katsura tree that grows 40-50 ft. tall and has magnificent spring and fall color.

Some Swarthmore residents object to the new ideas of low-growing or tall skinny trees because they are not in keeping with

the historical character of the town, but almost everyone admits the Tree Committee is effective. And the presence of representatives from nearby Ridley and Lansdowne at Cresson's meetings shows there are plenty of people eager to become involved in neighborhood street tree programs.

Anne S. Cunningham is a freelance garden writer and photographer whose work appears in the *Philadelphia Inquirer* and in magazines across the country.

WHAT CENTER CITY GREEN AND CENTER CITY RESIDENTS ASSOCIATION LEARNED FROM THE STREET TREE INVENTORY

 by Kathryn Newland

- What is the leading cause of city street tree damage?
- Which tree species has caused the most sidewalk damage?
- Which trees will do well on my side of the street?

With just a keystroke we can now find answers to these and hundreds of other questions about the street tree population of the areas bounded by Walnut and South streets and Broad Street and the Schuylkill River in Center City Philadelphia.

More than 80 volunteers collected 21 items of information about 2,207 trees for the inventory. Three thousand individual records comprise the database of tree information, e.g. trees, standing dead trees, stumps and empty pits. The physical environment of the project area — street width, building height, sun/shade patterns — provided insights into tree health and decline. Research into current planting and maintenance practices in Philadelphia gave clues to what does and doesn't work. From this we developed a plan that recommends urban-tolerant tree species, suggests improved tree planting methods, targets maintenance candidates, and shows opportunities for planting new street trees.

some findings

- Leading cause of city tree deaths: an unfriendly underground environment — not enough rooting space, poor drainage, little or no soil aeration, or on some streets, and underground steam pipe system.
- Second leading cause of city tree deaths: mechanical damage from vehicles resulting

in torn limbs and trunk gouging.

- Large tree pits (4x6 ft.) are better than smaller ones (3x3 ft.). One hundred cubic feet of soil is ideal. A soil-filled planting trench that continues between trees for an entire block and is covered with a porous surface gives trees the best chance of survival.

- More than 250 instances of sidewalk "raisings" from tree roots demonstrate the safety need for larger tree pits.

- The ginkgo tree (*Ginkgo biloba*) is an urban-tolerant, disease-free tree; dawn redwood (*Metasequoia glyptostroboides*) would be a good street tree on small blocks with narrow sidewalks; American hop hornbeam (*Ostrya virginiana*) holds up well as a shade tree on confined sidewalks. Bradford callery pear (*Pyrus calleryana* 'Bradford') and Oriental cherry (*Prunus serrulata* 'Kwanzan') should not be planted as street trees; they are susceptible to disease and structurally weak.

- Norway maple (*Acer platanoides*) invades any "forest" it inhabits and poses a problem to the larger environment. It should not be planted as a street tree because its too plentiful seeds would invade adjacent parks and woodlands.

- Trees in the project area were planted in waves of popularity, a practice that should be discontinued in the future. Three species — Ginkgo (*Ginkgo biloba*), Norway maple

(*Acer platanoides*), and Callery pear (*Pyrus calleryana*) comprise over half the total population in the area. A more diverse tree population will dilute the spread of pests and disease.

- Surviving from the 1940s and '50s, the London plane tree (*Platanus x acerifolia*) boasts the largest trunk size in the project area.

List of Tree Species Recommended for City Streets Available

Interpreting the Street Tree Survey results, the Delta Group Landscape Architects have prepared recommendations for tree species that will do well on city streets. Contact: Tree Project, Center City Green, Pennsylvania Horticultural Society, 325 Walnut Street, Philadelphia, PA 19106.

Kathryn Newland received her Master of Landscape Architecture from the University of Virginia. She has been project coordinator for Pennsylvania Horticultural Society's Center City Green program since January of 1989. Kathryn enjoys gardening in the East Falls section of Philadelphia.



Lafayette sycamore at Brandywine Battlefield State Park on Route 1.



TOUR THE CHAMPION TREES OF SOUTHERN CHESTER COUNTY

by Scott F. Woodbury

When William Penn settled in the New World in 1682, he considered trees to be important in the development of his new province. The survival of many trees today is directly due to Penn. In agreements with land purchasers, Penn stated that one acre of forest must be left standing for every five acres cut. Penn gave special attention to white oaks and, yes — the dreaded mulberry, a tree used at the time for silk production in the United States. Though most Penn mulberries have since been eliminated, white oaks make up 50% of all living Penn Trees.

Unfortunately, Penn's trees are deteriorating. Since the 1930s, the old timers have suffered a 50% mortality rate. Only one of 24 Penn Trees that existed in Philadelphia in 1932 remains. Our 17th century hitching posts are being milled to make car ports, and electric air conditioners now replace our once leafy units. Only a fraction of the trees that existed during Penn's time continue to grow. The remainder have died, mostly due to man's encroachment.

some needlessly lost trees

In the center of Oxford, Pennsylvania, a

Penn white oak growing in front of the burned Presbyterian Church has fallen prey to traveling pseudoarborists. As seen in the photo, this once grand beauty now suffers from being severely headed back, a technique that should be done with great prudence. In this case, paths for decay were opened and weak branches have developed. It will surely die before its time. Sadly enough, this tree had the potential to grow for at least another century. There is no need for such senseless butchery of healthy, living trees.

In West Marlborough Township, west of the Stone Barn Restaurant on Rt. 842, a grand old red oak (*Quercus rubra*) shared an open pasture with a pair of horses and was beyond earshot from the nearest residence or road. Undisturbed and alone, it grew to over 90 feet with a CBH (circumference at breast height) of 19 ft. 9 in. in 300 years. "Chop it down," they said, and a pair of scratching-stomping animals lost their back scratch and ceiling.

In Glen Mills, 300 feet from Thornbury Elementary School, a 24 ft. 10 in. CBH white ash, the state champion, was cut down. Students were told that the tree was dangerous because it had a cavity at the



Badly pruned white oak in Oxford, Pa., is now open to paths for decay. Well pruned, the tree might have lasted another century.

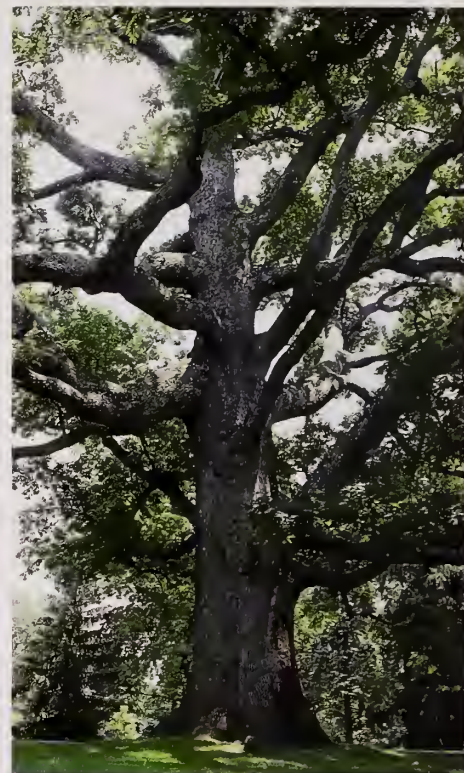
base. It proved to be solid after the arborist cut it down in 1979. The school has since closed.

With the thought that you may want to help preserve the few remaining venerable Penn giants, and would enjoy seeing them and others, I offer a tour of a few stately specimens in Southern Chester County. Why Chester County? Because the area's characteristic rolling hills and stream valleys have been functioning, undisturbed, for 250 years, it has produced the largest number of "Penn Trees."

continued



The first tree on the tour: a 300-year-old Chinkapin oak on Rt. 842, one half mile east of Rt. 401.



Pennsylvania's state champion white oak at London Grove Friends Meeting House.

Helpful hints to make your tour more enjoyable.

Because a tree's massive structure is most evident during its dormancy, the best time to plan your tour is between **late fall and early spring**. What better time for a break from choosing plants and schemes for next summer's garden?

Pack a picnic for the occasion. A wonderful spot is under the chinkapin oak described in the tour (pictured here).

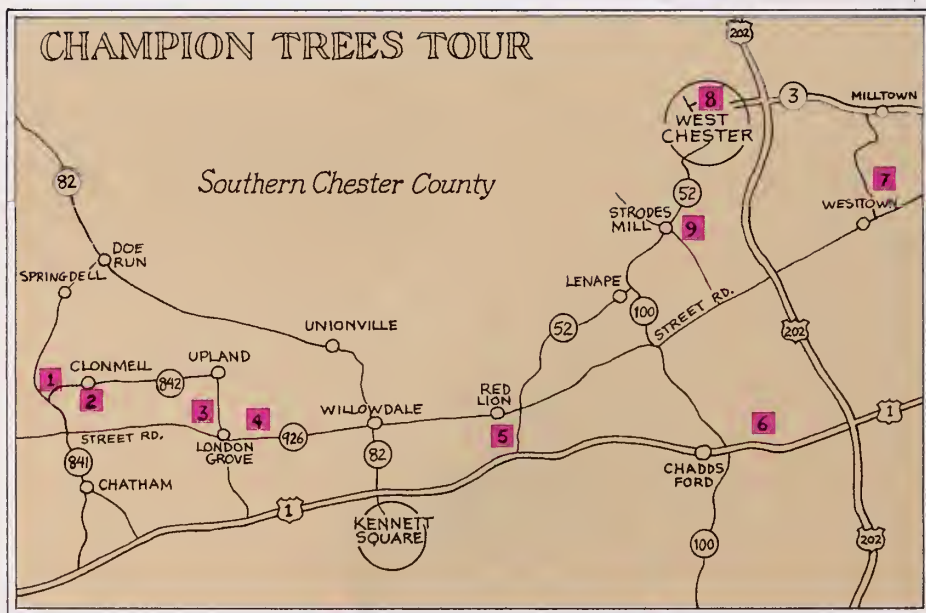
Dress warmly, and always have waterproof boots within reach. Some trees are off road and require a short hike. Treat your cockles to plenty of hot cocoa or spiced wine.

Respect private property. In most cases, the tree is on privately owned land. If deterring signs are posted, find the owners. They are probably aware of their wonderful tree and with some good humor, perhaps they will invite you in for a refreshment.

THE TOUR

The tour begins one-half mile east of Route 841 on Route 842, west of Upland in West Marlborough Township. Park at the first bend in the road, and walk northwest along the wooded hedgerow until you get to a red iron gate at the top. Beyond the gate and in the middle of the field, standing alone, you'll see a majestic Penn sentinel — a 300-year-old Chinkapin oak (*Quercus meuhlenbergii*). What Grace Hood wrote back in 1927 about a Chinkapin of the Oley Valley in Berks County is equally true for this one: "Its roots reach out like gigantic claws grasping the earth, or like some gigantic recumbent serpent." The American Forestry Association considers this Chinkapin oak to be the largest in the country. I measured a 19 ft. 7 in. circumference at breast height in May, 1988. If I had a favorite tree, this would be it.

Continue east on Rt. 842 only a few hundred yards. On the right, just off the road, you will easily spot the Brosius oak. The Penn Tree Committee of the Green Valley Association, estimates the tree to be



- | | | |
|--------------------|----------------------|---|
| 1 Chinkapin Oak | 4 Logan Oak | 7 Westtown School Arboretum |
| 2 Brosius Oak | 5 Longwood Gardens | 8 Barclay Retirement Home in West Chester |
| 3 London Grove Oak | 6 Lafayette Sycamore | 9 Strode Oak |

over 300 years old. If you don't mind sitting in a field while getting your ears rattled off by the sound of roaring cars, it might be a nice place to read a book. Nevertheless, the tree is a healthy specimen of white oak (*Quercus alba*) and deserves a look.

Go a bit further east on Rt. 842, until you get to Newark Road. Turn right onto Newark, and on the right, just before Rt. 926 you'll spot the London Grove Friends Meeting House. Behind it is the Pennsylvania state champion white oak. Don't pass it by for anything. Supposedly, the tree predates Penn's arrival. At any rate, the Friends of the Meeting House welcome your visit. They consider this tree to be a vital link with the past, and hence, care for it wisely. In May I measured a CBH of 20 ft. 3 in. Its lower limbs are massive.

From the London Grove Meeting House, head east on Rt. 926. One mile from Newark Street on Rt. 926 will be the Logan oak on the left. You can't miss it because it is blessed with the presence of an old white television/radio repair sign. It is a Penn Tree with a CBH of 19 ft. 6 in. Because the tree lost its top years ago, yet continued to grow, its trunk appears unproportionately massive and demands a distant look.

Next, to the east, is Longwood Gardens. Many stately trees still exist near the old Peirce du Pont house, including massive specimens of hemlock, birch, tulip poplar, magnolia, and sweet gum. South of the house grows a 13 ft. CBH, 97 ft. high, yellow flowering cucumber magnolia (*Magnolia acuminata cordata*). It is registered as a national champion and possibly is a world champ. It was planted by the Peirce family (ca. 1800) beside a ginkgo of similar size. A royal pair, if ever there was one.

Heading east a few miles on Rt. 1, which began as an Indian trail, you will come to the Brandywine Battlefield State Park on the left. There stands the Lafayette sycamore, a 20 ft. 9 in. CBH Penn Tree, famed for its role in the Battle of the Brandywine. The 400-year-old tree spreads over the top of the Lafayette Museum (1698) where on September 11, 1777, General Lafayette lay wounded during the battle at Chadds Ford.

North of the Brandywine Battlefield Park and east of West Chester is the Westtown School Arboretum. Though few trees are of Penn's era, there is a nice collection of uncommonly large trees. There is a mature Japanese umbrella pine (*Sciadopitys verticillata*) and an equally magnificent blue cuninghamia (*Cunninghamia lanceolata* 'Glaucua'). Nearby, are mature collections of magnolias, Asiatic maples, and numerous exotic conifers including the Mexican white pine (*Pinus ayacahuite*).

In West Chester, at the Barclay Retire-

ment Home (corner of High and Biddle streets) you will find an entire square block of mature open growing trees. The enormous ginkgo at the south corner of the house, predates the residents and their stories of old and is worth a look. Nearby is a 9 ft. 10 in. CBH Japanese larch (*Larix kaempferi*).

The final living Penn Tree on the tour is the Strode oak. It is located off Rt. 100 a few miles south of West Chester on the Strode Homestead, which is 100 yards east of Strode's Mill off Birmingham Road. It is more than 300 years old and measures 20 ft. CBH. The Strode Scrapple factory is out of commission and the Strodes moved away after a 200-year stay, but the tree still stands like a statue in perfect form.

If you are concerned for the well-being of these or other stately trees in Pennsylvania, contact the Pennsylvania State Bureau of Forestry* for further information. Also, Alfred Wertz's book entitled, *Penns Woods: 1682-1982* (Haverford House, Wayne, Pa., 1981), is the most interesting and updated guide to Penn Trees in and around Pennsylvania. Finally, if you become aware of an exceptionally large tree and wish to register it, contact the Pennsylvania Forestry Association. Trees listed in the registry are gaining valuable recognition, and a special certificate of ownership will be issued. Remember, our living links to the past are at stake. We must not lose touch with nature.

*Pennsylvania Forestry Association, 410 E. Main Street, Mechanicsburg, PA 17055; phone (717) 766-5371.

BIBLIOGRAPHY

Big Trees of Pennsylvania (fourth edition), Robert Clark, Mechanicsburg, Pa. Forestry Association, 1983.

Penn's Woods: 1682-1982, * Alfred W. Wertz and M. Joy Callender, Haverford House, Wayne, Pa., 1981.

Penn's Woods: 1862-1932, * Edward E. Wildman, Christopher Sower Co., Pa., 1933.

Pennsylvania Trees (fifth edition), * Joseph S. Illick, Pa. Department of Forests and Waters, Harrisburg, Pa., 1925.

*Available from Pennsylvania Horticultural Society Library.

When Scott F. Woodbury wrote this article he was an intern at Longwood Gardens, while he worked on his degree in Horticulture through the University of Wisconsin. Scott now works at the Missouri Botanic Garden's Scott Arboretum, where he's in charge of a five and a half acre Wildflower Project. His chief personal interest in gardening is using native plants in landscapes.

BOOKS ABOUT TREES

Compiled by Peggy D. Grady

All books are available from the Pennsylvania Horticultural Society Library, except those marked *. Books marked * may be available through Interlibrary loan. Please check with the PHS Library (phone 625-8256).

Designing with Trees, Anthony Paul, Salem House, Topsfield, Mass., 1989.

Diseases and Pests of Ornamental Plants, P.P. Pirone, John Wiley & Sons, NY, 1978.

Diseases of Shade Trees, Terry A. Tattar, Harcourt Brace Jovanovich, San Diego, 1989.

Diseases of Trees and Shrubs, Wayne A. Sinclair, Comstock Publishing Association of Cornell University Press, 1987. (Reference book)

Diseases of Woody Ornamentals, Gary W. Moorman, The Pennsylvania State University Cooperative Extension Service, 1990.

The Exuberant Gardener and the Controlling Hand, William H. Frederick, Jr., Little Brown, Boston, 1992.

* *Field & Laboratory Guide to Tree Pathology*, R.O. Blanchard & T.A. Tattar, Academic Press Inc., N.Y., 1981.

Flowering Shrubs and Small Trees, Isabel Zucker, revised and expanded by Derek Fell, Grove Weidenfeld, N.Y., 1990.

The Hillier Manual of Trees & Shrubs, 6th ed., David & Charles, Newton Abbot, England, 1991.

Insects that Feed on Trees and Shrubs, 2nd ed., Warren T. Johnson, Comstock Publishing Association of Cornell University Press, Ithaca, N.Y., 1988. (Reference book)

Manual of Woody Landscape Plants, 4th ed., rev., Michael A. Dirr, Stipes, Champaign, Ill., 1990.

Modern Arboriculture, Alex L. Shigo, Shigo and Trees, Durham, N.H., 1991.

Native Trees, Shrubs and Vines for Urban and Rural America, Gary L. Hightshoe, Van Nostrand Reinhold, N.Y., 1988.

A New Tree Biology, Alex L. Shigo, Shigo and Trees, Durham, N.H., 1986.

A New Tree Biology Dictionary, Alex L. Shigo, Shigo and Trees, Durham, N.H., 1986.

100 Great Garden Plants, William H. Frederick, Alfred A. Knopf, N.Y., 1975.

Plants that Merit Attention, Vol. 1 — Trees, Garden Club of America, Janet Meakin Poor, Editor, Timber Press, Portland, Ore., 1984.

Taylor's Guide to Trees, Houghton Mifflin, Boston, 1988.

* *Tree Diseases: Description & Control*, L.P. Nichols, The Pennsylvania State University Cooperative Extension Service, 1990.

Tree Maintenance, 6th ed., Pascal Pompey Pirone, Oxford University Press, N.Y., 1988. (Reference)

Tree Pruning, Worldwide Photo Guide, Alex L. Shigo, Shigo and Trees, Durham, N.Y., 1989.

Trees for American Gardens, 3rd ed., Donald Wyman, Macmillan, N.Y., 1990. (Reference book)

The Trees of North America, Alan Mitchell, Facts on File, N.Y., 1987.

Peggy Grady is assistant librarian/horticulturist at The Pennsylvania Horticultural Society.

PA Stone Farmhouse and Bank Barn with 30 acres. Feels like Swiss/English Cottage and Gardens. Secluded Homestead has two Walk-In Fireplaces with Central Sun Room, opening to fan-shaped stone stair to Patio. Original hardware and total ancient character undisturbed. 7 mins to Rt. 100. 45 mins to K of P. 2½ hours NYC. \$255,000. GLOCKER & CO., INC. **Kathie Rossé (215) 367-2058.**

WANTED TO BUY

Jewelry-Silver-Ceramics-Furniture
Rugs-Glass-Metals-Coins
Books-Clocks-Paintings-Prints-Etc.
Antique Gallery
8523 Germantown Ave., Phila., PA 19118
(215) 248-1700

DISTINCTIVE

PENNSYLVANIA-GROWN PLANTS

for gardening and landscaping. Many scarce, rare and unusual selections along with hardy natives available. Call or write for FREE catalog.

APPALACHIAN GARDENS

Box 82
Waynesboro, PA 17268-0082
(717) 762-4312

AMERICAN GREENHOUSE SYSTEMS

- Maintenance on ALL greenhouses — IBG, Janco, L&B, Rough, National, etc.
 - Refurbishing older greenhouses
 - Sales of Poly, Lexan and Glass Enclosures
 - Redwood and Aluminum Solariums and Conservatories
 - Yearly Maintenance Contracts
- P.O. Box 817 Malaga New Jersey 08328
(609) 694-3500 FAX (609) 694-1840
(800) 676-3505

JAMES FARR LANDSCAPE CONSTRUCTION

- Planting and masonry design/installation
 - Pools, waterfalls, drainage systems, Japanese gardens, traditional/contemporary gardens, etc.
- (215) 884-1720

CONTEMPORARY STRUCTURES FOR HOME AND GARDEN

At last! Great new designs for those garden necessities. Arbors, Trellises & Gates, built in steel to last. Write or call for catalog.

The Painted Garden, Inc.
304 Edge Hill Road
Glenside, PA 19038
(215) 884-7378

GARDEN DESIGN — Design and installation of specialty gardens including perennial borders, herb, kitchen and English cottage gardens.
CAROL MANICONE (215) 348-4830.

BRIAN J. TEMME TREE SERVICE

- Quality Tree Care
 - Pruning, Trimming, and Removals
 - Fertilization, Disease and Insect Control
 - Cabling and Stump Removal
- (215) 572-5665 or (215) 657-0555

REED'S WOODS

QUALITY WORK AT A FAIR PRICE
Springhouse Restorations
Additions/Renovations
Decks, Flagstone, Brickwork
Carpentry & Landscape Structures
Call for Free Estimate
76-A Bodine Road
Malvern, PA 19355
(215) 827-9663

The Philadelphia Flower Show.
Landscape Design and Planning.
Installation and Renovation.

For the Country Garden
Herbs from the Finest Growers

Over 100 Varieties

The Best Plants Featuring

The Styer Award Winners

Garden Accessories and Necessities

Lead Stone Terra-Cotta

Tools to Last a Lifetime

Water Gardening Pool Supplies Books

Bonsai Tools Pottery Plants

Shade Color Fragrance

Experience the Pleasure of Gardening

J. Franklin Styer Nurseries

Since 1890

Celebrating 100 Years in Horticulture

Open Seven Days A Week

(215) 459-2400

TREE TRANSFERS, INC.

Large Tree Transplanting and Sales
Machine and Specialized Hand Digging
Dealers and Locators of
Large Horticultural Specimens
Mature Screening and Shade Trees
Assessing and Renovating Mature Collection
and Estate Gardens
Plant Material Purchased
(215) 635-2310

ROBERT W. MONTGOMERY LANDSCAPE NURSERY welcomes you to visit our 20-acre nursery, located on a restored Chester County farm in lovely Chester Springs, Pa. Our full-service landscape nursery can fill all your gardening and outdoor living needs with 25 full-time horticulturists on staff. Growers of over 1,000 varieties of perennials in mature sizes to complement the established landscape.

Patio Furniture Shop • Greenhouses
4 acres Nursery Stock • Landscape Materials
Garden Shop • Seasonal Christmas Shop
Professional Landscape Design
and Installation

The Philadelphia Flower Show's
5-time "Best in Show" Winner
& Creator of the 1992

Silver-Trophy-Winning Central Feature

Your Horticultural Resource Center

ROBERT W. MONTGOMERY

LANDSCAPE NURSERY

Our Only Location:

Route 113, Chester Springs, PA
363-2477

Open 7 Days a Week, Weekdays 8-8

LARGEST SELECTION OF RHODODENDRONS & AZALEAS

on the East Coast with many new varieties. Also Kalmia, Pieris, and many companion plants. Mail order catalog, \$2. **ROSLYN NURSERY**, Dept GS, Box 69, Roslyn, NY 11576.

GREENHOUSE CONSTRUCTION Sales and Service

Janco, Lord & Burnham and more.
Call Robert J. LaRouche at
Glass Enclosures Unlimited
228 Poplar Avenue, Wayne, PA 19087
(215) 687-2444

GARDEN DESIGN

ARCHITECTURE & SITE PLANNING

Todd R. Phillippi, AIA
Integrated Design Specialists
Free Newsletter
(215) 750-8770

MEADOWBROOK FARM

1633 Washington Lane

Meadowbrook, PA 19046

887-5900

Mon-Sat 10-5

AN ENCHANTING EXPERIENCE

awaits you in our gardens and greenhouses. Choose from lovely geraniums, beautiful annuals, thousands of perennials and flowering and evergreen shrubs that are perfect for sunny, shaded or groundcover areas. Accent your garden with rare plants, topiaries, fountains, statuary or beautifully planted patio pots. Unique gift and baskets of blooming plants are our specialty.

For The Better Things in Gardening

MEADOWBROOK FARM

WATERLOO GARDENS . . .

WHERE BEAUTIFUL GARDENS BEGIN.

•CELEBRATING 50 YEARS•

- Award-Winning Landscape Design
- Over 1,400 cultivars of Perennials
- 50-ACRE NURSERY**
- Over 100 varieties of Herbs
- Over 125 varieties of newest & Old-fashioned Roses
- THE NEW 1992 ANNUALS
- Rare Specimen Plants
- Patio & Garden Furniture
- Exquisite Gift & Gourmet Shops
- Unique Bridal Registry
- Beautifully Designed Arrangements of Fresh, Silk & Dried Flowers
- Aquatic garden plants & supplies
- Pools, Fountains, and Statuary
- European Dishgardens

WATERLOO GARDENS

DELAWARE VALLEY'S

LARGEST GARDEN CENTER

Two Locations — Open 7 Days a Week

Exton — 200 N. Whitford Rd. (215) 363-0800

Devon — 136 Lancaster Ave. (215) 293-0800

PENNSYLVANIA'S BEST

Oak Bark Mulch — Dark, Fine Shredded. Picked up or delivered in bulk. Mushroom Soil & Topsoil also available.

(215) 483-8922 (215) 482-1711

RUTGERS HYBRID DOGWOODS

Showy & pest-resistant new releases

MAGNOLIA 'ELIZABETH'

Many other interesting trees & shrubs

FAIRWEATHER GARDENS

Box 330, Greenwich, NJ 08323

(609) 451-6261

Call or write for price list

Outdoor Furniture Specialists

Hill Co.

An outstanding selection of outdoor furniture and accessories. Distinctive designs in aluminum, wrought iron, teak, and all-weather wicker. Ask about our seasonal discounts.

8615 Germantown Ave.

Chestnut Hill (215) 247-7600

DISCOVER YOUR HIDDEN GARDEN

Low-voltage lighting systems designed, installed & serviced utilizing quality components from America's leading manufacturers. 25 years experience in lighting design assures you of the desired effect be it subtle or dramatic. Our maintenance-free lighting carries the best guarantee in the business: we even warrant bulb life. Call 215-376-1181 for information or appointment.

THE LANDSCAPE LIGHTING COMPANY

SHANAHANS' OFFERS TWO WAYS TO BEAUTIFY YOUR PROPERTY!

Visit our garden center for containerized conifers and deciduous materials. Rhodos, Star Roses, varieties of Juniper, Azaleas, Flowering Cherries, 'October Glory' Maple, etc.

OPEN Tues.-Sat. from 10 am to 5 pm — 1 mile South of Rte. 322 at Cambridge Rd., Honey Brook, PA (215) 273-3915.

OR

Select from our fields and holding areas — conifers and leaf trees too numerous to list. 2½ miles from Honey Brook on Rt. 10 South. Call for free catalog.

JULY SPECIAL: Sheared Col. Spruce—10% disc.

RETAIL and WHOLESALE
SHANAHANS' TREE FARMS and NURSERIES
(215) 273-3318

Gift certificates available
Our repeat customers say, "Why go elsewhere!"

WEST CHESTER **\$249,000**
Victorian Home, 3 heated greenhouses on 1.2 Ac., 4 Br, 1½ Bath, tin ceilings, cupola, pebble fireplace, office. Exc. location, Residential w/commercial variance. Call **Nancy Rogal, Re/Max Action** 215-363-4051.

LINDA CORSON LANDSCAPE DESIGN

- Consulting
- Plans
- Supervision

Member ASLA
Registered Landscape Architect
215-247-5619

HORTICULTURAL TREASURE — FLOURTOWN

Four-season, professionally landscaped property with perennials, bulbs, shrubs, mature trees, cultivars, accents, house in excellent condition — close to banks, shopping, good schools, golf course, transportation, medical/dental services. (215) 836-5076

David Brothers BEAN ROAD NURSERY

Landscape Architects, Builders
and Nurserymen

Providing the Fine Art of Garden Construction
and Landscape Restoration

QUALITY SERVICE WITH COURTESY
AND RELIABILITY

EDGAR and KIM DAVID
247-2992 584-1550

COMFORTABLE GARDEN FURNITURE

English Regency Style
Carefully Hand Forged
Entirely Hand-Riveted

Fred B. Odell
6209 Upper York Road
New Hope, PA 18938
(215) 794-8967

AFRICAN VIOLETS

100 varieties, standard, micromini, miniature, trailers, variegated types. Greenhouses open daily. Cultural book, \$6.95 ppd. Color catalog 50¢. **TINARI GREENHOUSES**, 2325 Valley Road, Huntingdon Valley, PA 19006 (215) 947-0144

Green Leaf Tree & Landscape Services
"Tree conservation for the future"
(215) 646-1011

JOSEPH MANERO & SONS, INC. MASONRY

(215) 885-3711

- Brick or Stone Garden Walks and Walls
- Flagstone and Slate Terraces
- Over 45 Years Experience
- Design Service Available

THE INN WHERE THE GUESTS make all the arrangements... with flowers. A 2-day seminar on basic flower arranging with lots of "hands-on" experience plus a stay at a classic Vermont Country Inn equals a great weekend. For information call or write:

The Inn at Pittsfield
Route 100 Box 675 GS
Pittsfield, VT 05762
(802) 746-8943

Rare Perennials Plus...

Hostas Grasses Water Plants Shrubs
Vast Selection. Demonstration Gardens.

Heart's Ease Greenhouse

Tewksbury Orchids
Califon, New Jersey
(908) 832-2708

FREEZE-DRIED BOTANICALS

Quality freeze-dried flowers, fruits and
vegetables to suit your design needs.
Call for our catalog and seasonal items.

(215) 992-9832

206 Ross Rd Ste 105A • King of Prussia, PA

PERENNIALS

Our 50-page Catalog and Planting Guide provides useful information on more than 1,000 varieties, many rare and unusual. Send \$2 for your copy (refundable on your first order).

THE CROWNSVILLE NURSERY

PO BOX 797

CROWNSVILLE, MD 21032

PERENNIALS-ORNAMENTAL GRASSES DAYLILIES-HOSTAS-FERNS

OR COME VISIT US AT
BRIDGEWOOD GARDENS
1103 HONEYSUCKLE LANE
ANNAPOLIS, MD 21401

SPECIALIZING IN UNUSUAL FLOWERING
PLANTS FOR THE GARDEN.

Please call for seasonal hours.

(410) 849-5640

SALE

Once in a lifetime

Simple's Nursery & Garden

Specializing in Horticultural Art
Free-standing, big Espalier Hollies and more.
Unusual Topiaries, Trompe l'oeil
All of the entire collection
Pachysandra procumbens
Cunninghamia lanceolata 'Glaucua'
Boxwood 'Kingsville Dwarf' • Hyperlufa troughs
Fall of 1992

DEER PROOF PLANTS

HAVE BEAUTIFUL LANDSCAPES
AND YOUR WILDLIFE, TOO

We grow plants resistant to damage by deer.
Now your landscapes can be varied, beautiful,
and you can live with the Deer, too!

CONTACT US

HILDEBRANT NURSERIES

OLDWICK NJ
"ESTABLISHED 1923"
908-439-2256

Water Lilies

Large selection of water garden plants
Liners, pumps & pond supplies
Goldfish & Koi
Consultation, design, installation
Joan Nangle
at Potter's Landscaping Co.
359 Paoli Pike
Malvern, PA 19355
(215) 647-2926

FOR SALE: HYACINTH GLASSES

Victorian English vases — all shapes
Call or write for photos, or visit:

Antique Gallery
8523 Germantown Ave., Phila., PA 19118
(215) 248-1700

SPECIMEN PLANT MATERIAL

Sciadopitys verticillata — 22 ft., \$4,200
Magnolia grandiflora — 27 x 18 ft., \$4,200
Pine & Spruce, 14-18 ft., \$625
Acer pal. 'Bloodgood' — 15 ft., \$1,450
Acer palmatum dissectum — 12 ft. sp., \$3,200
Cornus kousa — 15 ft., \$1,200
Ilex opaca — 18 ft., \$1,600
Buxis suffrut. — 6 x 12 ft., \$2,200

Planted prices may vary
Many other plants available!

JAMES FARR LANDSCAPING
(215) 884-1720

or

TREE TRANSFERS, INC.
(215) 635-2310

HADDONSTONE

Fine English Garden Ornaments
and Architectural Stonework.

88 page Color Catalog \$5.00
Gale Nurseries

A Design/Build Company

for period, native and contemporary gardens
offers Haddonstone displayed in gardens for
the viewer to study at our Gwynedd address.
Catalogs and prices are available, please call
for an appointment.

Gale Nurseries
1716 School House Road
Box 264

Gwynedd, PA 19436
(215) 699-4714 FAX (215) 699-3203

NURSERY MANAGER wanted for progressive
nursery dedicated to producing native plants.
Minimum 4 yr degree with 5 yrs nursery
manager experience. Salary commensurate
with experience and references. Send resume
to: 1927 York Road, Timonium, MD 21093.

The Delaware Valley Daylily Society

announces its annual
Daylily Show and Sale
Saturday, July 11, 1992 10 am to 6 pm
at The Court, King of Prussia

Fall Daylily Sale and Auction
Saturday, September 12, 1992
Jenkins Arboretum

631 Berwyn Baptist Road
Devon, PA

General Sale — 9 am
Auction of choice cultivars — 12:30 pm
The public is invited and welcome

COX & CO., INC.

Tree and Landscape Services.
Tree preservation, planting, removals.
(215) 687-1780
Nursery: 15 Airport Rd., Limerick, PA 19468

INDEX

Index to Volume 20, September 1991 through July 1992 (listing shows issue date and page number).

TITLES

(and cross index by key word)

A-B

- Annual PHS Book Sale — Staff, Sept., 8
Annual Dividend Declared: A Plant — Cunningham, Sept., 4
Arborist: Your Tree's Best Friend — Mills, Jul., 24
Arrangement, Mass: Harvest Show Design Class, — Hayden, Sept., 13
Art: Clay in the Garden — Leavitt, Nov., 13
Bats and Balsam on Broadway: Editorial — Byrne, Nov., 3
Bee Rescue, The — Ball, ... May, 10
Blithewold Gardens and Arboretum: Storm Warnings — Morris, Jan., 11
Blue Flower Challenge — Bell, Mar., 16
Book Sale, Annual PHS — staff, Sept., 8
Books About Trees — Grady, Jul., 39
Bounty Basket: See Harvest Show
Bulbs: Richard Both's South African Garden — Swan, Nov., 4

C

- Center City Green & Center City Residents Assoc. Learned From Street Tree Inventory, What — Newland, Jul., 36
Center For Historic Plant Research — Taylor, Jan., 26
Champion Trees of Southern Chester County, Tour — Woodbury, Jul., 37
Choosing Trees for Your Landscape — Olin, Jul., 8
Christmas Trees: Merchants of Joy, Selling ... in the Big Apple — Nash, Nov., 8
City Garden Changes, A — Goldstein, Mar., 29
City Garden: A Shady Townhouse Garden — Druse, May, 26
Clay in the Garden — Leavitt, Nov., 13
Clematis viticella 'Betty Corning' 1992 Winner, PHS Gold Medal Plant Award — Meyer, Jan., 4
Common Tree Diseases — Blum, ... Jul., 25
Cooperative Feeds 160 Families, This Farm — Pepper, May, 3
Country Vegetable Garden, A — Armstrong, Sept., 18
Crataegus viridis 'Winter King' 1992 Winner, PHS Gold Medal Plant Award — Meyer, Jan., 5
Crataegus viridis 'Winter King': Letter to the Editor — Goldner, ... Mar., 33
Creating a Wildlife Refuge on Your Property — Huff, Nov., 16

D-E

- Deciduous Trees, Big, of Delaware Valley: Oaks & Other Favorites — Ballard, Jul., 3
Dehydrating Vegetables and Fruits From Your Kitchen — Johnson, ... Sept., 20
Design: A Plan For Every Garden — Mills, Nov., 31
Design: Choosing Trees for Your Landscape — Olin, Jul., 8
Design: PHS Garden Design Contest — Staff, Nov., 31

- Design: Prepare a 5-Year Plan for Your Garden — Phillippi, May, 14
Diospyros kaki: The Oriental Persimmon — Gyer, Mar., 20
Diseases: Common Tree — Blum, ... Jul., 25
Edible Flowers — Flounders, Mar., 3
Editorial: Meditate and Choose, Amnesty and a Mini-Survey for Readers — Byrne, Sept., 3
Editorial: Bats and Balsam on Broadway — Byrne, Nov., 3
Experiment With Stonescaping — Hageman, Nov., 27

F-G

- Farm Cooperative Feeds 160 Families — Pepper, May, 3
Fickle Gardener, The — Bruno, Nov., 22
Five-Year Plan for Your Garden, Prepare a — Phillippi, May, 14
Floral Bounty — Phillippi, ... Sept., 16
Flowers, Edible — Flounders, Mar., 3
Franklin, A Garden For Miss — Daniels, Nov., 32
Fruits and Vegetables, Dehydrating: From Your Kitchen — Johnson, ... Sept., 20
Garden For Miss Franklin, A — Daniels, Nov., 32
Garden in the Shade — Mills, May, 25
Garden: Tales from the Wissahickon — Weidner, Jan., 20
Gardening in the Shade — Brinton, Sept., 28
Gold Medal Plant Award, 1992 Winners — Meyer, Jan., 3
Growing Interests: *Scilla autumnalis* — Brinton, Sept., 32
Gypsum: Letter to the Editor — Zimmerman, Sept., 33



H-L

- Harvest Show Design Class: Mass Arrangement — Hayden, ... Sept., 13
Harvest Show: A Country Vegetable Garden (Bounty Basket) — Armstrong, Sept., 18
Harvest Show: Dehydrating Vegetables and Fruits From Your Kitchen — Johnson, Sept., 20
Harvest Show: Floral Bounty Basket — Phillippi, Sept., 16
Harvest Show: Squash Bounty By the Basket — Payne, Sept., 14
Harvest Show: Tomato Bounty Basket — Noble, Sept., 10
Harvest Show: Tortoiseshell Yam — A Winner — Rogers, Mar., 19
Heirloom Tomatoes, A Passion for — Swan, Mar., 11
Horticultural Spray Oils: A Safer Way to Control Pests? — Steward, May, 18
Hurricane: (Blithewold Gardens/ Museum) Storm Warnings — Morris, Jan., 11

- Invitation to Plant Societies, Sept., 33
Irises That Rebloom — Fuchs, May, 7
Ivy: Pin Your Slopes Down — Sculfer, Mar., 24
Kimberton School: This Farm Cooperative Feeds 160 Families — Pepper, May, 3
Lady's Slipper: Plant the Yellow Lady's Slipper in Fall — Morehouse, Sept., 9
Landscape Design: See Design
LeHoullier: A Passion for Heirloom Tomatoes — Swan, Mar., 11
Let the Machines Roll — Chandoha, Sept., 24
Let the Machines Roll: Letter to the Editor — Messer, Nov., 30
Letter to the Editor: Gypsum — Zimmerman, ... Sept., 33; Let the Machines Roll — Messer, ... Nov., 30; Poison Ivy Aid — Simpson, ... Mar., 32; What to Do with Blue — Goldstein, ... Mar., 32; *Crataegis viridis* 'Winter King' — Goldner, ... Mar., 33; Snowflowers — French, ... Mar., 33
Library Expands Hours/Plant Clinic Monday Evenings — Staff, Jan., 33
Lilium 'Jane Pepper' — Staff, Sept., 8
Lobelia Hybrids, New — Taylor, Mar., 26

M-O

- Magnolia* x 'Galaxy': 1992 Winner, PHS Gold Medal Plant Award — Meyer, Jan., 6
Magnolia grandiflora 'Edith Bogue' 1992 Winner, PHS Gold Medal Plant Award — Meyer, Jan., 7
Meadow Lark Farm: Plant Swap in the Barn — Platt, Mar., 8
Meditate and Choose, Amnesty and a Mini-Survey for Readers, Editorial — Byrne, Sept., 3
Merchants of Joy: Selling Christmas Trees in the Big Apple — Nash, ... Nov., 8
Monticello: Center For Historic Plant Research — Taylor, Jan., 26
Morris Arboretum of Univ. of Penna.: Storm Warnings — Morris, Jan., 11
New Lobelia Hybrids — Taylor, Mar., 26
Oaks & Other Favorites: Big Deciduous Trees of Delaware Valley — Ballard, Jul., 3
Orchid: Plant the Yellow Lady's Slipper in Fall — Morehouse, Sept., 9

P-R

- Passion for Heirloom Tomatoes — Swan, Mar., 11
Penn Trees: Tour Champion Trees of Southern Chester County — Woodbury, Jul., 37
People Make a Difference — Cunningham, Jul., 33
Perennials: Plant Swap in the Barn — Platt, Mar., 8
Persimmon: *Diospyros kaki*: The Oriental Persimmon — Gyer, Mar., 20
Pest Control: Horticultural Spray Oils: A Safer Way to Control Pests? — Steward, May, 18
Pest Control: Slug It Out with the Slugs — Taylor, May, 32



- Photography: Blue Flower Challenge — Bell, Mar., 16
PHS Garden Design Contest — Staff, Nov., 31
PHS Library Expands Hours — Staff, Jan., 33
Picea orientalis: 1992 Winner, PHS Gold Medal Plant Award — Meyer, Jan., 8
Pin Your Slopes Down — Sculfer, ... Mar., 24
Plan For Every Garden, A — Mills, Nov., 31
Plant Clinic Monday Evenings — Staff, Jan., 33
Plant Dividend, PHS: An Annual Dividend Declared: A Plant — Cunningham, Sept., 4
Plant Research: Historic Center For — Taylor, Jan., 26
Plant Societies, 1991 Invitation to — Sept., 33
Plant Society Meetings in 1992 — Lukens, Jan., 30
Plant Swap in the Barn — Platt, Mar., 8
Plant the Yellow Lady's Slipper in Fall — Morehouse, Sept., 9
Poison Ivy Aid: Letter to the Editor — Simpson, Mar., 32
Poison Ivy: A Bane For All Seasons — Daniels, Jan., 23
Prepare a 5-Year Plan for Your Garden — Phillippi, May, 14
Pruning: The Miracle of Order — Rosner, Jul., 21
Rebloom, Irises That — Fuchs, May, 7
Recycling: Trash for Trees — Goldstein, Jul., 32
Rhododendron Fever — Winter, May, 29
Richard Both's South African Garden — Swan, Nov., 4
Rock Wall Garden, The — McKeon, May, 21
Roots: What Happens Under Ground — Miller, Jul., 17

S

- Salvias — Reed, Jan., 16
Scilla autumnalis: Growing Interests — Brinton, Sept., 32
Sculpture: Clay in the Garden — Leavitt, Nov., 13
Shade, Garden in the — Mills, May, 25
Shade, Gardening in the — Brinton, Sept., 28
Shady Townhouse Garden, A — Druse, May, 26
Slopes: Pin Your Slopes Down — Sculfer, Mar., 24

Slug It Out With the Slugs — Taylor, May, 32
 Small Garden: Some Trees for Small Gardens — Morris, Jul., 13
 Snowflowers — Brinton, ... Jan., 28
 Snowflowers: Letter to the Editor — French, Mar., 33
 Soil: Gypsum, Letter to the Editor — Zimmerman, Sept., 33
 Some Trees for Small Gardens — Morris, Jul., 13
 South African Garden, Richard Both's — Swan, Nov., 4
 Spray Oils, Horticultural: A Safer Way to Control Pests? — Steward, May, 18
 Squash Bounty By the Basket — Payne, Sept., 14
 Stonescaping, Experiment With — Hageman, Nov., 27
 Storm Warnings — Morris, ... Jan., 11
 Street Trees, Tender Loving Care for — Schrieber, Jul., 29
 Street Trees: People Make a Difference — Cunningham, Jul., 33
 Street Trees: What Center City Green & Center City Residents Assoc Learned From Street Tree Inventory — Newland, Jul., 36

T-V

Tales from the Wissahickon — Weidner, Jan., 20
 Tender Loving Care for Street Trees — Schrieber, Jul., 29
 Tomato Bounty — Noble, ... Sept., 10
 Tomatoes, A Passion for Heirloom — Swan, Mar., 11
 Tools: Let the Machines Roll — Chandoha, Sept., 24
 Tornado: (Morris Arboretum of Univ. of Penna.) Storm Warnings — Morris, Jan., 11
 Tortoiseshell Yam: A Winner — Rogers, Mar., 19
 Tour Champion Trees of Chester County — Woodbury, Jul., 37
 Tractors: Let the Machines Roll — Chandoha, Sept., 24
 Trash for Trees — Goldstein, Jul., 32
 Trees: Arborist: Your Tree's Best Friend — Mills, Jul., 24
 Trees: Books — Grady, Jul., 39
 Trees: Choosing Trees for Your Landscape — Olin, Jul., 8
 Trees: Common Tree Diseases — Blum, Jul., 25
 Trees: Oaks & Other Favorites, Big Deciduous Trees of Delaware Valley — Ballard, Jul., 3
 Trees: People Make a Difference — Cunningham, Jul., 33
 Trees: Pruning: The Miracle of Order — Rosner, Jul., 21
 Trees: Roots: What Happens Under Ground — Miller, Jul., 17
 Trees: Some Trees for Small Gardens — Morris, Jul., 13
 Trees, Street: What Center City Green & Center City Residents Assoc Learned From Street Tree Inventory — Newland, Jul., 36

Trees: Tender Loving Care for Street Trees — Schrieber, Jul., 29
 Trees: Tour Champion Trees of Southern Chester County — Woodbury, Jul., 37
 Trees: Trash for Trees — Goldstein, Jul., 32
 Vegetable Garden, A Country — Armstrong, Sept., 18
 Vegetables and Fruits, Dehydrating From Your Kitchen — Johnson, ... Sept., 20
Viburnum x 'Eskimo': 1992 Winner, PHS Gold Medal Plant Award — Meyer, Jan., 9

W-Z

Wall Garden, The Rock — McKeon, May, 21
 What Center City Green & Center City Residents Assoc. Learned From Street Tree Inventory — Newland, Jul., 36
 What to Do with Blue: Letter to the Editor — Goldstein, Mar., 32
 Wildlife: Creating a Wildlife Refuge on Your Property — Huff, Nov., 16
 Winter Gardens — Mills, ... Jan., 32
 Winter: Snowflowers — Brinton, Jan., 28
 Yam, Tortoiseshell: A Winner — Rogers, Mar., 19

AUTHORS

A-B

Armstrong, Sue — A Country Vegetable Garden Sept., 18
 Ball, Liz — The Bee Rescue May, 10
 Ballard, Ernesta D. — Oaks & Other Favorites: The Big Deciduous Trees of Delaware Valley Jul., 3
 Bell, Leonie — Blue Flower Challenge Mar., 16
 Blum, Lisa — Common Tree Diseases Jul., 25
 Brinton, Toni — Gardening in the Shade Sept., 28; Growing Interests: *Scilla autumnalis* Sept., 32; Snowflowers Jan., 28
 Bruno, Barbara — The Fickle Gardener Nov., 22
 Byrne, Jean — Meditate and Choose, Amnesty and a Mini-Survey for Readers, Editorial Sept., 3; Bats and Balsam on Broadway: Editorial Nov., 3

C-F

Chandoha, Walter — Let the Machines Roll Sept., 24
 Cunningham, Anne S. — Annual Dividend Declared: A Plant ... Sept., 4; People Make a Difference Jul., 33
 Daniels, Carol Fletcher — A Garden For Miss Franklin Nov., 32; Poison Ivy, A Bane For All Seasons Jan., 23
 Druse, Ken — A Shady Townhouse

Garden May, 26
 Flounders, Ruth — Edible Flowers Mar., 3
 French, Janet — Letter to the Editor: Snowflowers Mar., 33
 Fuchs, Lucy — Irises That Rebloom May, 7

G-K

Goldner, Alfred H. — Letter to the Editor: *Crataegus viridis* 'Winter King' Mar., 33
 Goldstein, Libby — A City Garden Changes Mar., 29; Letter to the Editor: What to Do with Blue Mar., 32; Trash for Trees Jul., 39
 Grady, Peggy D. — Tree Book List Jul., 39
 Gyer, John and Janet — *Diospyros kaki*: The Oriental Persimmon ... Mar., 20
 Hageman, Marie D. — Experiment With Stonescaping Nov., 27
 Hayden, James — Design Class: A Mass Arrangement of All Fresh Plant Material Sept., 13
 Huff, Priscilla Y. — Creating a Wildlife Refuge on Your Property ... Nov., 16
 Johnson, Joan Brinton — Dehydrating Vegetables and Fruits From Your Kitchen Sept., 20



L-N

Leavitt, Lydia — Clay in the Garden Nov., 13
 Lukens, Carol — Plant Society Meetings in 1992 Jan., 30
 McKeon, Judy — The Rock Wall Garden May, 21
 Messer, David W. — Letter to the Editor: Let the Machines Roll ... Nov., 30
 Meyer, Paul W. — 1992 Winners of the PHS Gold Medal Plant Award Jan., 3
 Miller, Joanne — Roots: What Happens Under Ground, How to Protect Your Tree's Roots Jul., 17
 Mills, Kathleen — A Plan For Every Garden ... Nov., 31; Winter Gardens Jan., 32; Read About Winter Gardening ... Jan., 33; Garden in the Shade ... May, 25; The Arborist: Your Tree's Best Friend ... Jul., 24
 Morehouse, Timothy — Plant the Yellow Lady's Slipper in Fall Sept., 9
 Morris, Julie — Storm Warnings Jan., 11; Some Trees for Small Gardens Jul., 13

Nash, George — Merchants of Joy: Selling Christmas Trees in the Big Apple Nov., 8
 Noble, Dorothy — Tomato Bounty ... Sept., 10

O-R

Olin, Victoria Steiger — Choosing Trees for Your Landscape Jul., 8
 Payne, Elise — Squash Bounty By the Basket Sept., 14
 Pepper, Jane G. — This Farm Cooperative Feeds 160 Families ... May, 3
 Phillippi, Patricia — Floral Bounty ... Sept., 16
 Phillippi, Todd R. — Prepare a 5-Year Plan for a Garden May, 14
 Platt, Ellen Spector — Plant Swap in the Barn Mar., 8
 Reed, Joanna McO — Salvias Jan., 16
 Rogers, Ray — Tortoiseshell Yam: A Winner Mar., 19
 Rosner, Hal — Pruning: The Miracle of Order Jul., 21

S-Z

Schreiber, Patricia — Tender Loving Care for Street Trees Jul., 29
 Schlufer, Nicholas — Pin Your Slopes Down Mar., 24
 Simpson, Judith M. — Letter to the Editor: Poison Ivy Aid Mar., 32
 Steward, V. Bruce — Horticultural Spray Oils: A Safer Way to Control Pests? May, 18
 Swan, Bonnie — Richard Both's South African Garden Nov., 4
 Swan, John P. — A Passion for Heirloom Mar., 11
 Taylor, Patricia A. — Center For Historic Plant Research Jan., 26; New Lobelia Hybrids ... Mar., 26; Slug It Out with the Slugs May, 32
 Weidner, Bea — Tales from the Wissahickon Jan., 20
 Winter, Fred S. — Rhododendron Fever May, 29
 Woodbury, Scott — Tour Champion Trees of Southern Chester County Jul., 37
 Zimmerman, L. Wilbur — Letter to the Editor: Gypsum Sept., 33



20 Year Index Available

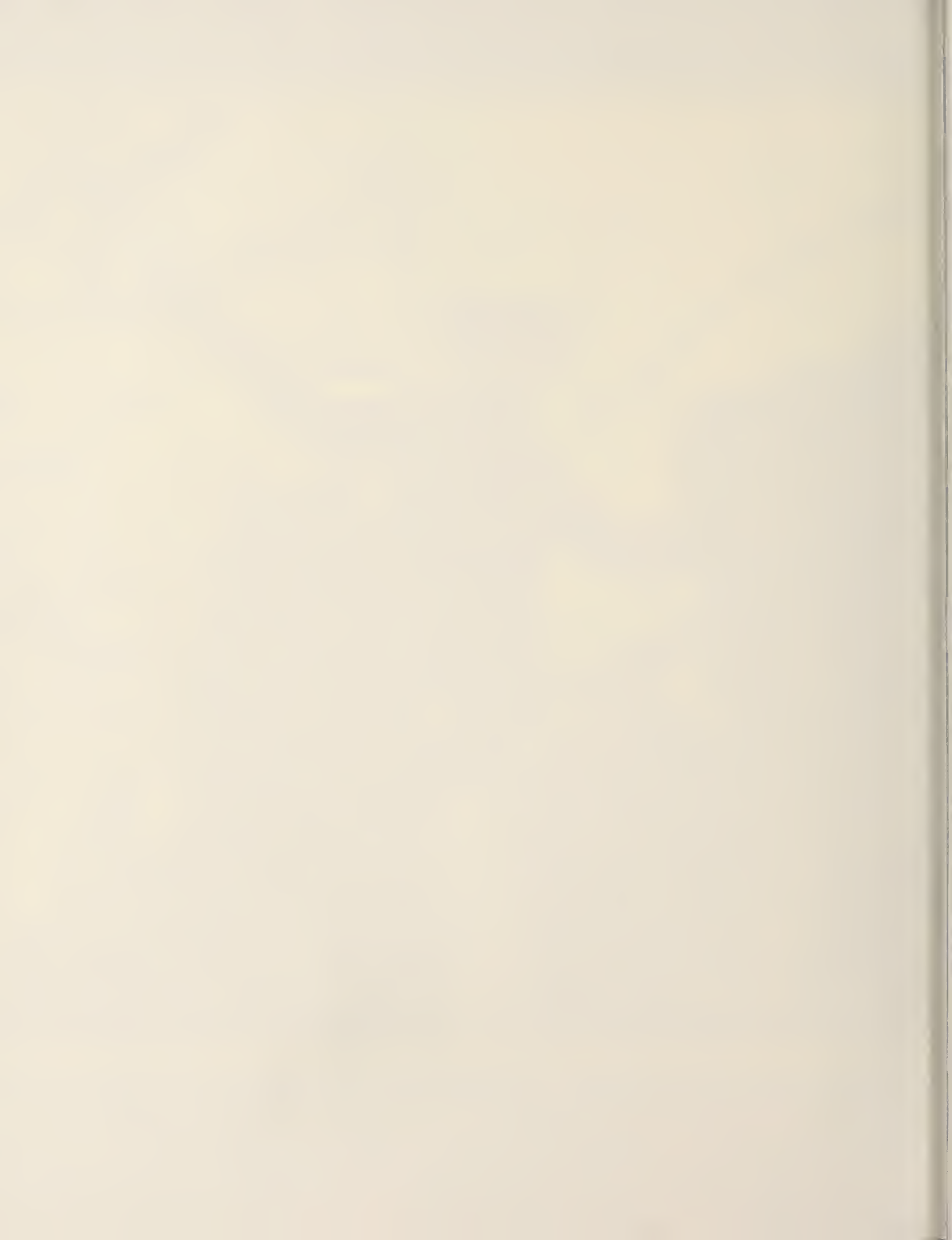
A 20-Year *Green Scene* Index will be available in late September 1992.

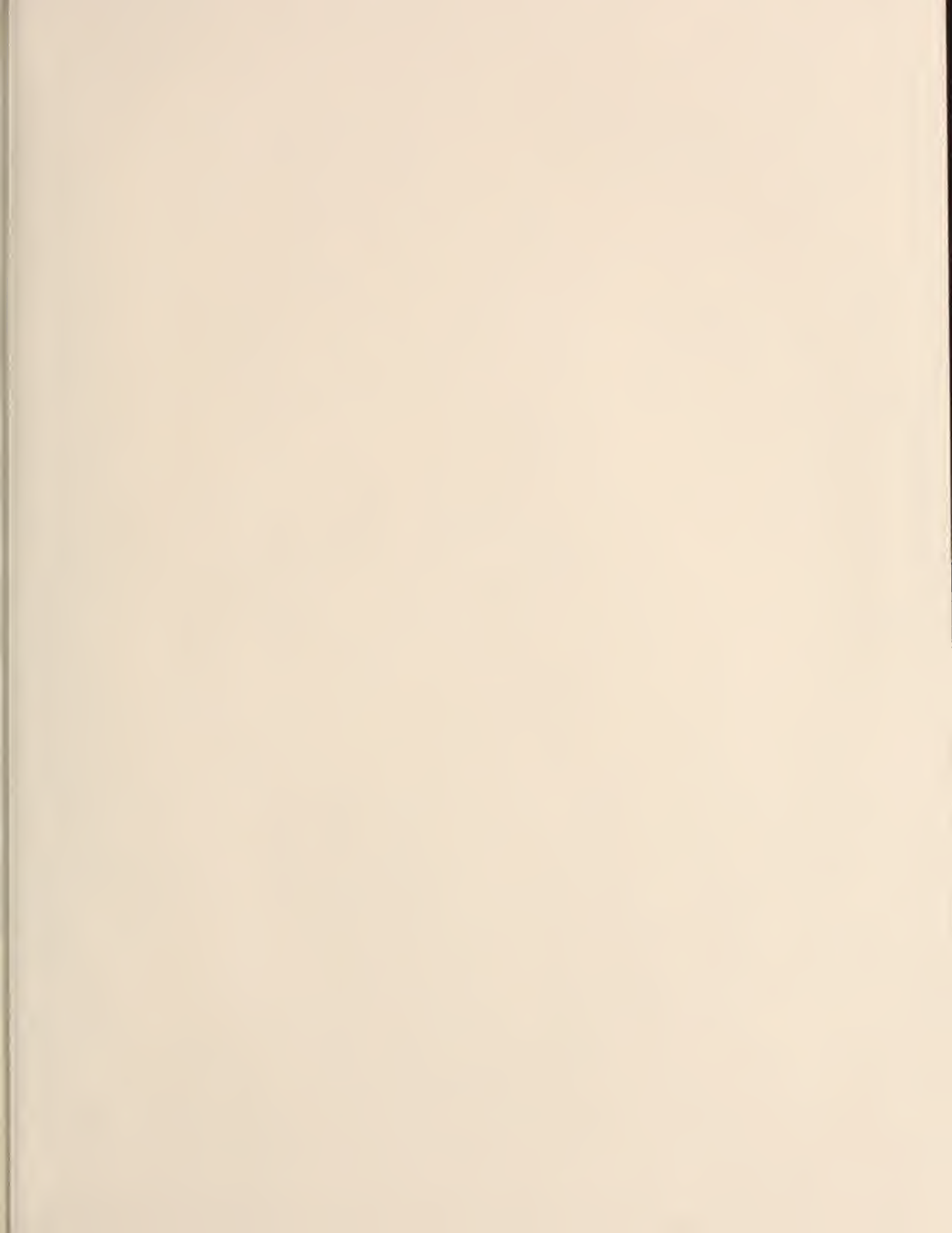
Send \$10 to The Pennsylvania Horticultural Society, 325 Walnut Street, Philadelphia, PA 19106, Attn: *Green Scene* Index. Make checks payable to The Pennsylvania Horticultural Society.

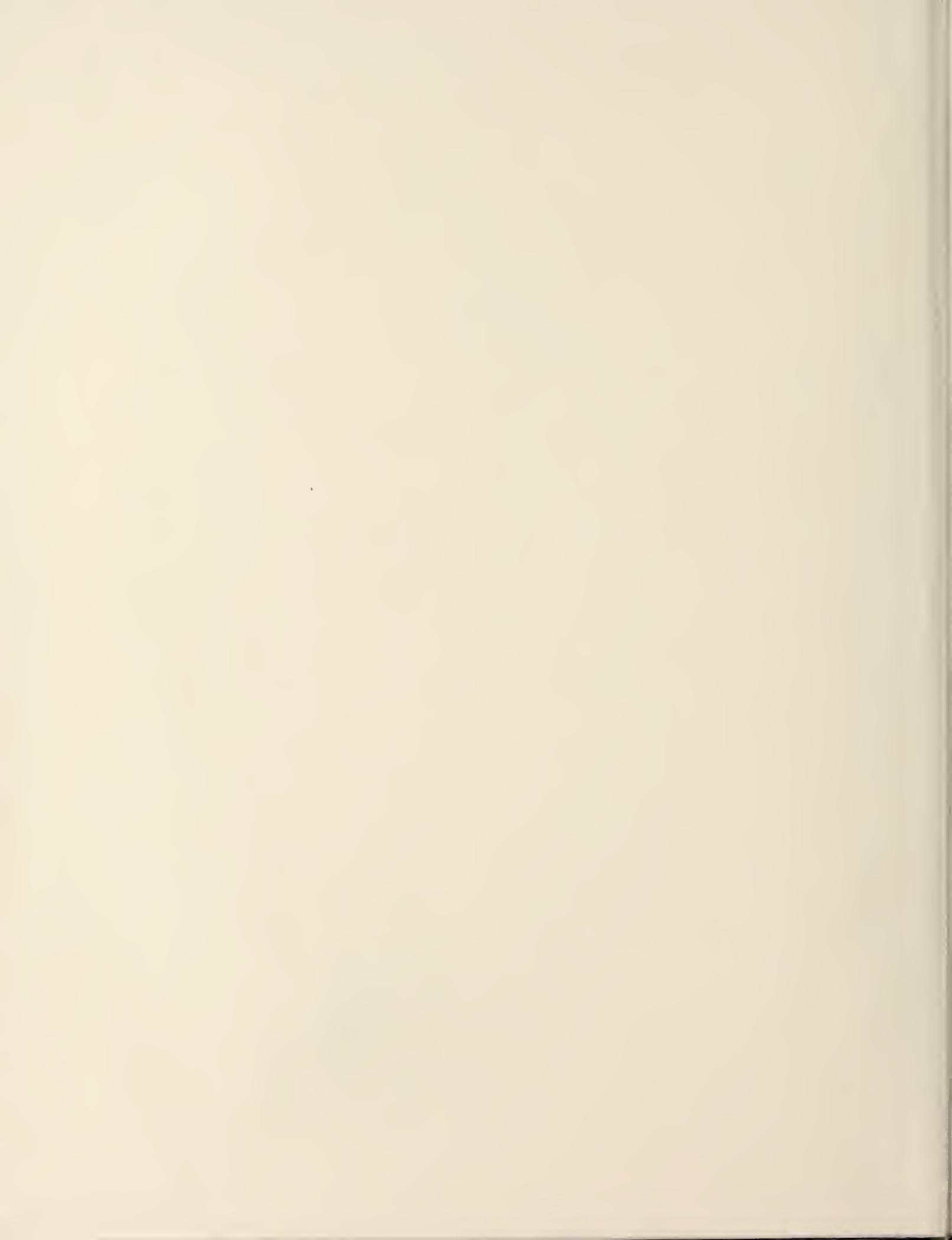


When first introduced to Philadelphia in 1784, the *Ailanthus altissima* or tree of heaven was regarded as a valuable ornamental because of its luxuriant tropical growth. Today some people consider it a weed tree because of its huge output of readily germinated seeds. The tree of heaven can still be found in city gardens when homeowners and gardeners choose to work with what they have. Here arborist Hal Rosner prunes and thins to remove deadwood and enhance branch structure to encourage the tree's sculptural quality. See page 21.

photo by David Graham







PENNSYLVANIA HORTICULTURAL SOCIETY



3 1827 00018570 1

